GRYPHON™ Dx30/Mx30

Reference Manual

DATALOGIC

GRYPHON™ Dx30/Mx30

REFERENCE MANUAL

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Gryphon™ Dx30/Mx30

Ed.: 09/2006

This manual refers to software version 3.1.0 and later

Rev. B

CONTENTS

GENERAL VIEW

GRYPHON™ Dx30/Mx30 SERIES READERS

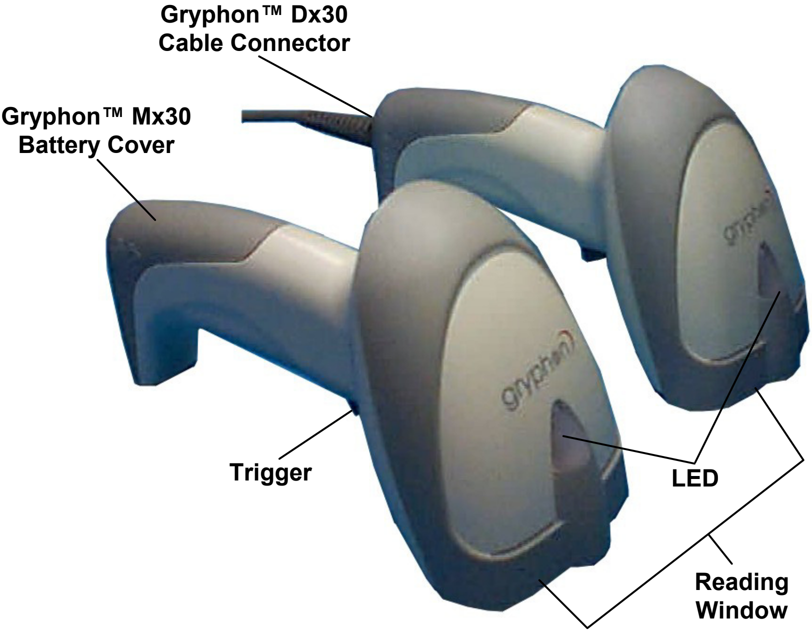


Figure A – Gryphon™ Dx30 and Mx30 Series Readers

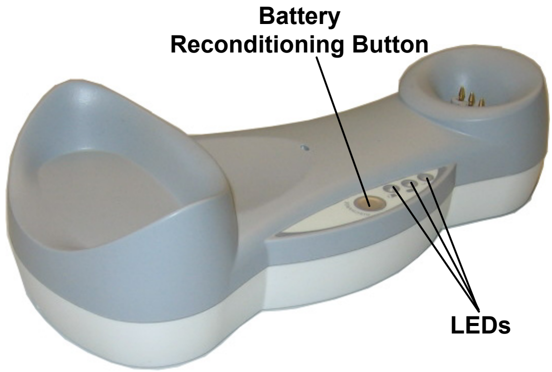


Figure B – OM-GRYPHON™ and C-GRYPHON™

1 INTRODUCTION

Datalogic has moved a step ahead in the concept of “instinctive reading. ”The new **Gryphon™** reader series has been developed to provide optimised reading performance through excellent ergonomic design, a natural instinctive reading approach and innovative good reading feedback.

The “INSTINCTIVE READING DISTANCE,” a concept introduced by Datalogic a few years ago based on in-depth ergonomic studies, represents the natural position of the user while reading a code. The **Gryphon™** series takes this concept one step further. The series includes two tethered (D130 and D230) and two cordless (M130 and M230) models, allowing operations anywhere mobility is required at the desk/POS and around the shop floor, as well as in a small warehouse. The new “green spot,” (Datalogic patent application) produced by the **Gryphon™** provides “good reading” feedback directly on the code, where the user usually tends to be looking. Correct pointing becomes quick and easy thanks to the sharp and bright illumination line. All these characteristics are coupled with outstanding performance in terms of reading quickness and decoding capability thanks to state-of-the-art optics and a decode rate of 270 scans/sec, making the **Gryphon™** very user friendly, intuitive and fast.

Specially optimised optics allow reading of the most popular standard codes with superior depths of field from near contact to over 30 cm. High resolution codes, which can reach 3 mils are also easily read. Two specific models of the Gryphon™ series (D230 and M230) have also been designed to provide decoding of the PDF417, as well as traditional barcodes. The **Gryphon™** reader series is paving the road for innovative barcode reading.

2 INSTALLATION



CAUTION

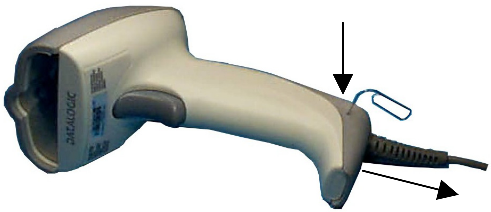
Connections should always be made with power OFF!

2.1 GRYPHON™ DX30 INTERFACE CABLE CONNECTIONS

The Gryphon™ Dx30 reader incorporates a multi-standard interface which can be connected to a Host by plugging the correct interface cable into the connector as shown below.



To disconnect the cable, insert a paper clip or other similar object into the slot on the reader battery cover while unplugging the cable from the Gryphon™ Dx30 body.

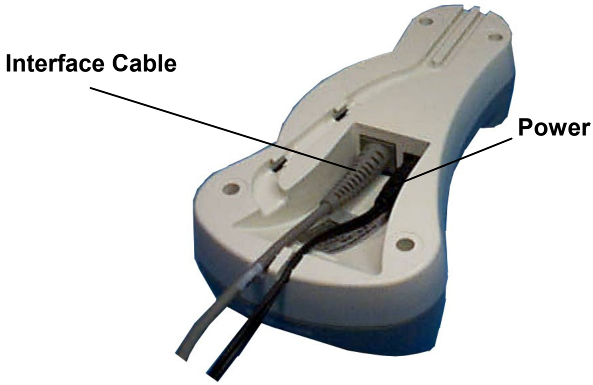




CAUTION

Connections should always be made with power OFF!

2.2 OM-GRYPHON™ INTERFACE CABLE CONNECTIONS

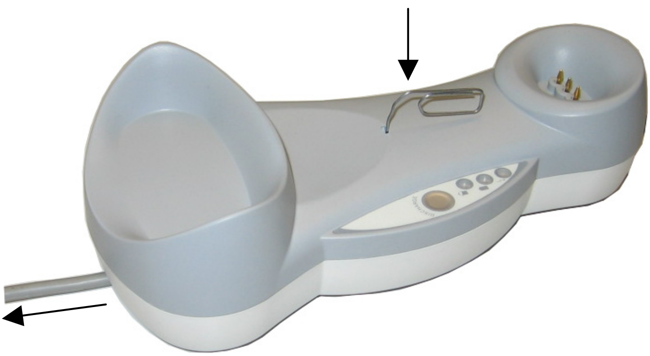


OM-GRYPHON™ Connectors

The OM-GRYPHON™ incorporates a multi-standard interface which can be connected to a Host by simply plugging the correct interface cable into the Host connector, placed on the base of the cradle. In addition the cradle must be connected to an external power supply.

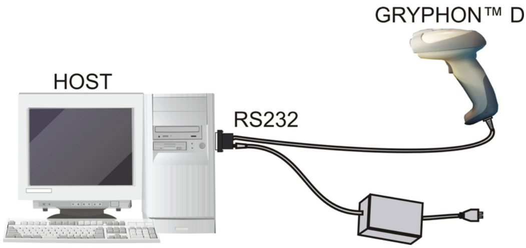
To disconnect the cable, insert a paper clip or other similar object into the hole corresponding to the Host connector on the body of the cradle.

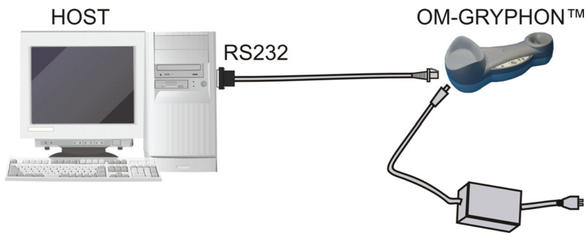
Push down on the clip while unplugging the cable.



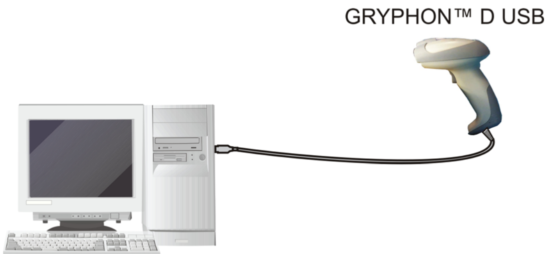
Disconnecting the OM-GRYPHON™ Cable

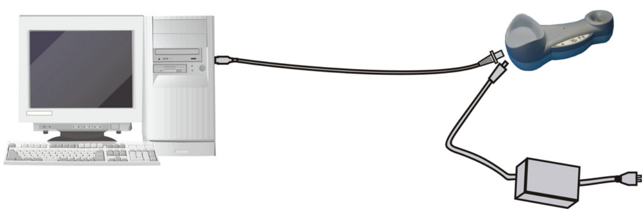
2.3 RS232 CONNECTION



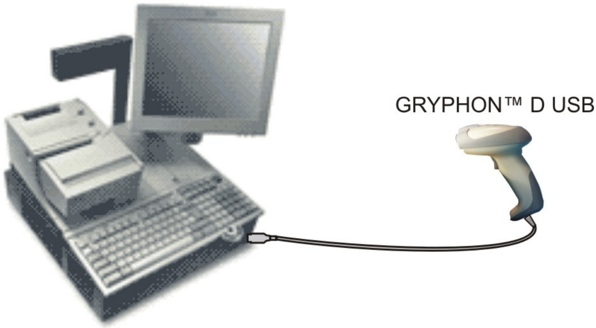


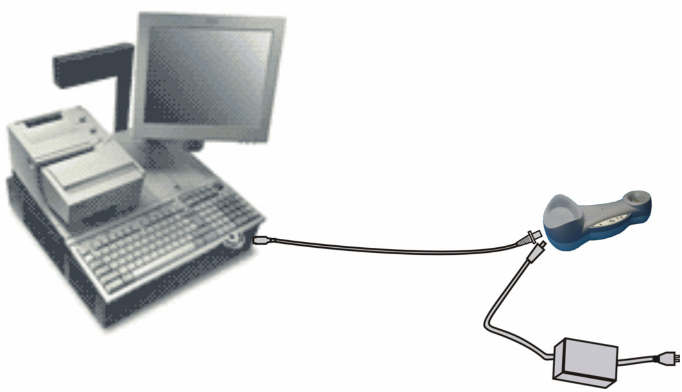
2.4 USB



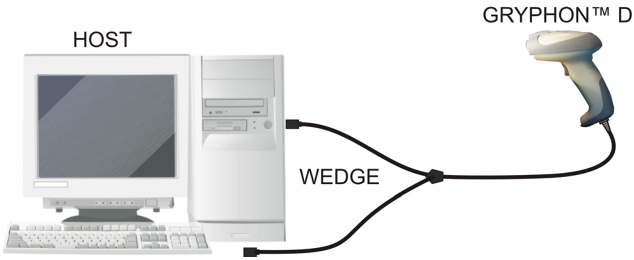


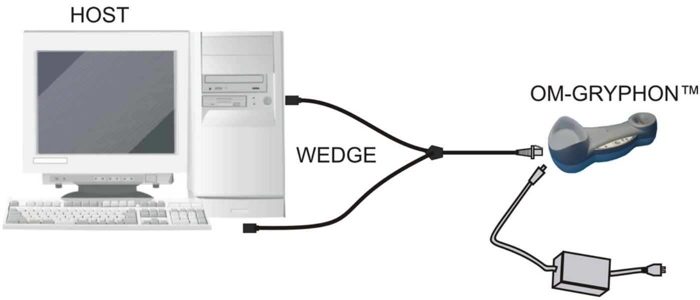
2.5 IBM USB POS

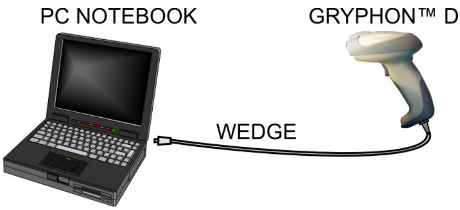


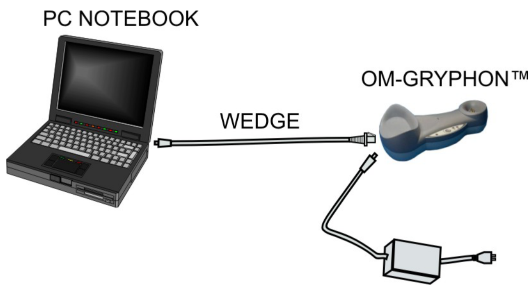


2.6 WEDGE CONNECTION

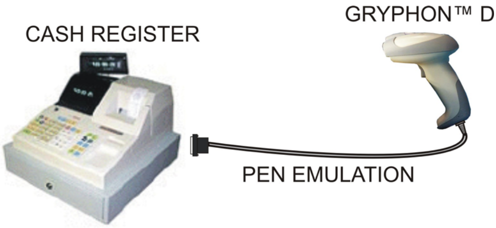


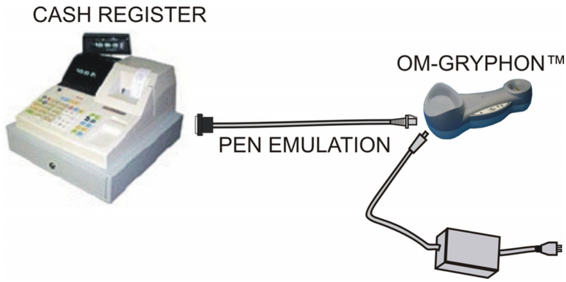

HOST
OM-GRYPHON™
WEDGE


PC NOTEBOOK
GRYPHON™ D
WEDGE


PC NOTEBOOK
OM-GRYPHON™
WEDGE

2.7 PEN EMULATION CONNECTION





2.8 GRYPHON™ MX30 BATTERY MAINTENANCE

2.8.1 Battery Type

You can install NiMh or Alkaline AA batteries in the Gryphon™ Mx30.

2.8.2 Battery Charging

Once the system is connected and powered, you can place the Gryphon™ Mx30 into the cradle to charge the battery.

When the scanner is correctly inserted in the cradle, the red LED on the cradle goes on to indicate that the battery is charging. The green LED on the cradle goes on when the battery is completely charged.

When using NiMh batteries, frequent recharging before fully discharging can cause a “memory effect” in which the batteries assume a reduced capacity.

Since it is not practical to wait for the reader to be fully discharged before recharging it, the OM-Gryphon™ and the C-Gryphon™ are provided with a battery-reconditioning feature which overcomes the “memory effect” problem.

To perform battery reconditioning, simply press the battery-reconditioning key on the cradle control panel: the battery will be fully discharged in a short period of time (red LED flashing), then automatically recharged.

We recommend performing the battery reconditioning once every few months or whenever you feel the battery capacity has decreased.

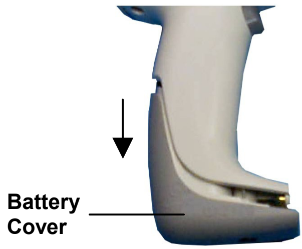
2.8.3 Replacing Gryphon™ M Batteries

To change the batteries in your Gryphon™ Mx30 scanner, proceed as follows:

1. Unscrew the battery cover screw.



2. Open the battery cover.



3. Replace the old batteries with new ones, then screw the battery cover back into place.



NiMh, or Alkaline AA Batteries



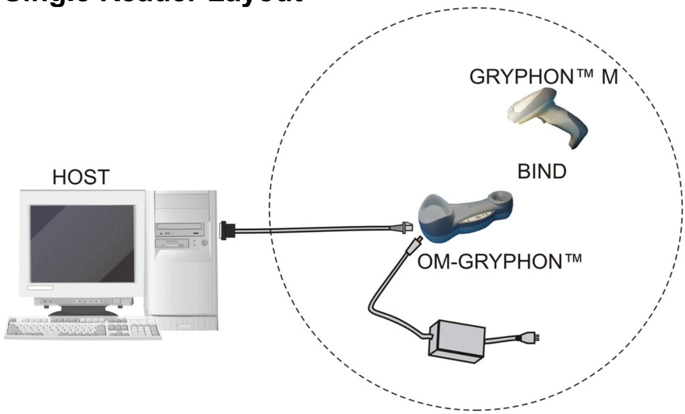
WARNING	***Do not incinerate, disassemble, short terminals or expose to high temperature. Risk of fire, explosion. Use specified charger only. Risk of explosion if the battery is replaced by an incorrect type. Dispose of the batteries as required by the relevant laws in force.***

3 GRYPHON™ MX30 SYSTEM AND NETWORK LAYOUTS

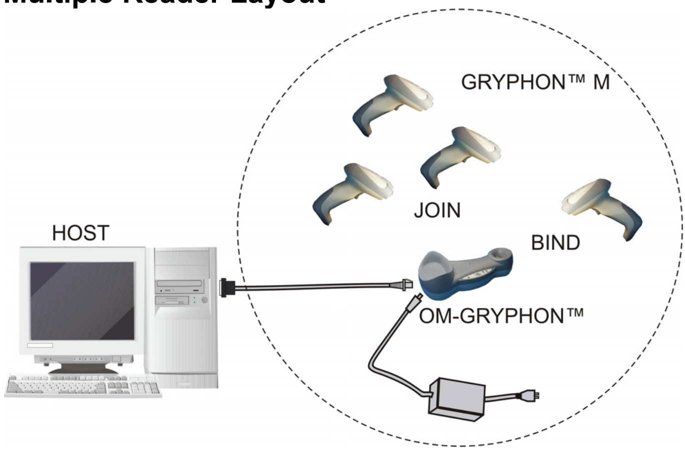
There are two basic system layouts that can be employed: Stand Alone systems and Multidrop STAR-System™ Networks.

3.1 STAND ALONE LAYOUTS

3.1.1 Single Reader Layout



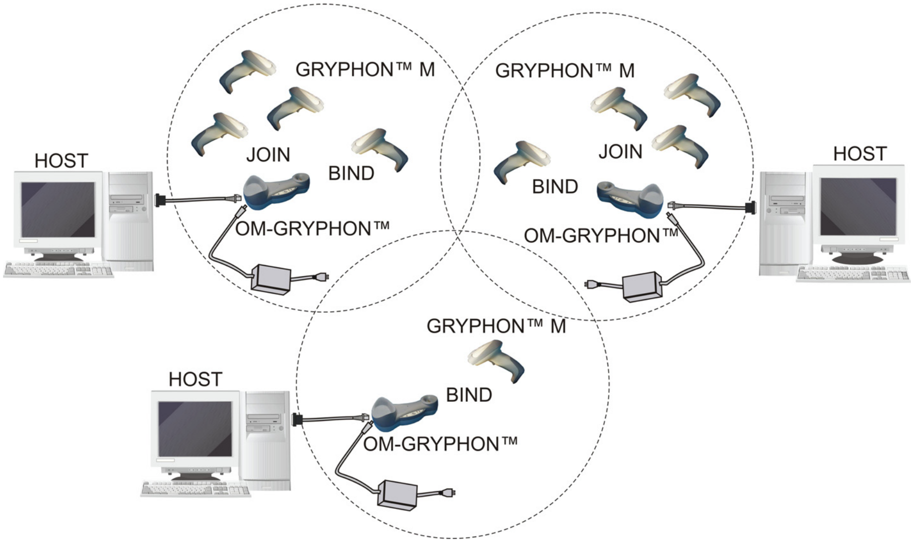
3.1.2 Multiple Reader Layout



In stand alone systems, each cradle is connected to a single Host.

3.1.3 Multiple Stand Alone Layouts

Many stand alone connections can operate in the same physical area without interference, provided all readers and cradles in the system have different addresses.



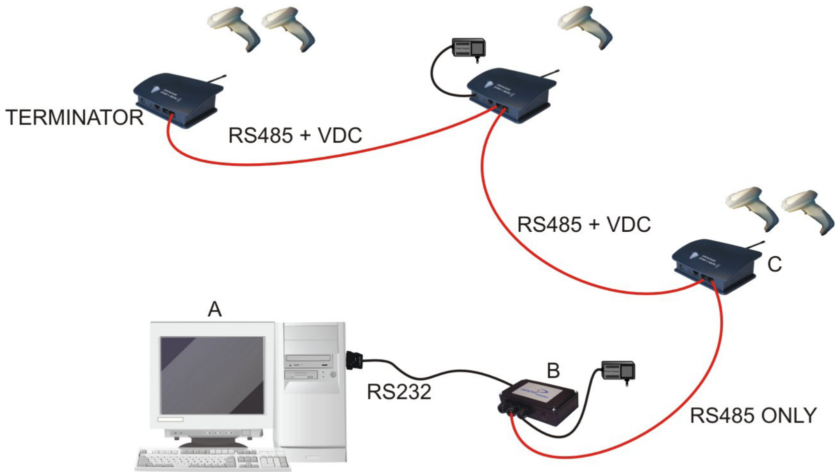
Multiple Stand Alone Systems in the Same Area

Since the cradles can communicate to multiple Gryphon™ Mx30 scanners, you might find it useful to employ one or more C-Gryphon™ battery chargers in addition to the OM-Gryphon™ cradle, so that the battery re-charging operation can be performed for several scanners at the same time.

3.2 MULTIDROP STAR-SYSTEM™ NETWORK LAYOUTS

Even though many stand alone systems can operate in the same physical area without interfering with each other, it may be desirable to bridge data from multiple base stations in a network to a single Host. Gryphon™ Mx30 readers are compatible with STAR-System™ networks. These networks provide seamless active roaming for any RF reading device in the system.

3.2.1 Host Master Layout



A. Host Master with STAR-Link™
B. STAR-Box™ converter
C. STARGATE™ base stations

Example Multidrop STAR-System™ Network with Host as Master

In this layout the Host acts as the Master using STAR-Link™ software. The Host is connected in RS232 to a STAR-Box™ converter which is connected to the first slave in the RS485 network. In this way the base stations provide communications between a single Host and all readers in the system. STARGATE™ base stations are used as slaves in this network. The Slaves at the ends of the network must be terminated (see the STARGATE™ and STAR-Box™ Installation Manuals).

See par. 4.5 and or the Sm@rtSet Help On-Line for system configuration specifications.

4 CONFIGURATION

4.1 CONFIGURATION METHODS

4.1.1 Reading Configuration Barcodes

This manual can be used for complete setup and configuration of your reader by following the setup procedures in this chapter (see par. 4.2 for an overview).

If you wish to change the default settings, this manual provides complete configuration of your reader in an easy way.

To configure your reader:

1) Open the folded page in Appendix C with the hex-numeric table and keep it open during the device configuration.

2) Read the **Enter Configuration** code ONCE, available at the top of each page of configuration.

3) Modify the desired parameters in one or more sections following the procedures given for each group.

4) Read the **Exit and Save Configuration** code ONCE, available at the top of each page of configuration.

Reference notes describing the operation of the more complex parameters are given in chapter 5.

4.1.2 Using DL Sm@rtSet

DL Sm@rtSet is a Windows-based utility program providing a quick and user-friendly configuration method via the RS232 or USB-COM interfaces.
It also allows upgrading the software of the connected device (see the DL Sm@rtSet User's Manual for more details).

4.1.3 Copy Command

A previously configured device (Master), can be used to send its configuration directly to other devices of the same type (Slaves). The particular procedure for each device is given in par. 5.9.

4.1.4 Sending Configuration Strings from Host

An alternative configuration method is provided in Appendix A using the RS232 or USB-COM interface. This method is particularly useful when many devices need to be configured with the same settings. Batch files containing the desired parameter settings can be prepared to configure devices quickly and easily.

4.2 SETUP PROCEDURES

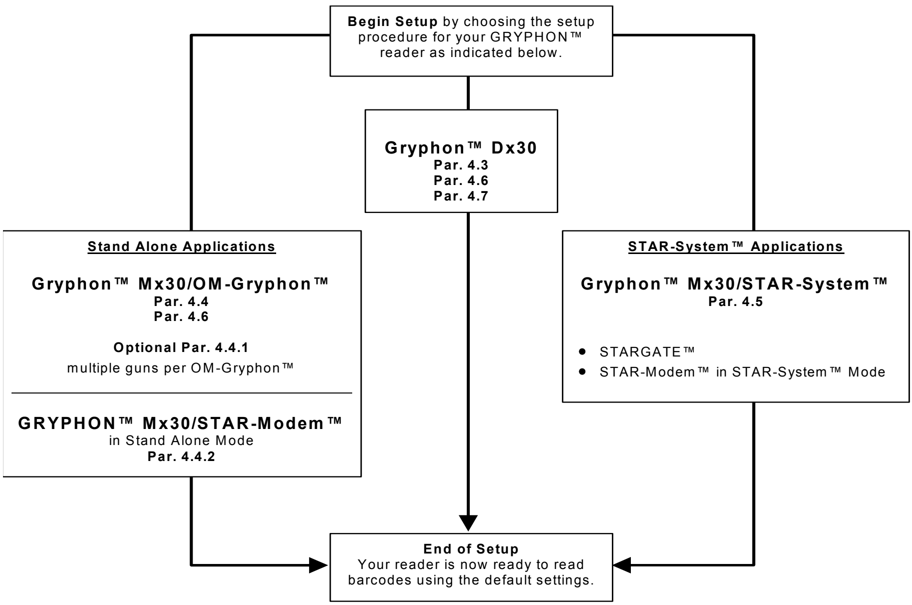
For Gryphon™ Dx30 Series readers, follow the setup procedures in pars. 4.3, 4.6 and 4.7.

For Gryphon™ Mx30 Series readers, the setup procedures depend on two basic applications, Stand Alone or STAR-System™.

Stand Alone applications allow communication with the Host by either the OM-Gryphon™ cradle (par. 4.4), or by the STAR-Modem™ radio modem (par. 4.4.2).

STAR-System™ applications allow communication with the Host through an RS485 network by the STARGATE™ RF base station or by the STAR-Modem™ radio modem (par. 4.5).

Proceed as shown in the following diagram:



4.3 GRYPHON™ DX30 SETUP

1. Read the restore default parameters code below.

Restore Gryphon™ Dx30 Default

After reading the above code, go to par. 4.6 Interface Selection.

4.4 GRYPHON™ MX30/OM-GRYPHON™ STAND ALONE SETUP

Read the restore default parameters code below.

1. Restore Gryphon™Mx30 Default

2. Read the codes below to set the radio address of the Gryphon™ Mx30 reader.

Enter configuration

3. Set Radio Address

+

four digits for the Gryphon™ Mx30 Address (from **0000** to **1999**).

All readers used in the same area must have different addresses.

4. Exit and Save configuration

5. Read the **Bind** code to pair the Gryphon™ Mx30 to the OM-Gryphon™ cradle. The reader is dedicated to the cradle. Any previously **bound** reader will be excluded.

To connect several readers to the same cradle see the following paragraph 4.4.1, 'Using Multiple M Series Readers with Same Cradle'.

Bind

The green LED on the Gryphon™ Mx30 will blink; the reader is ready to be positioned onto the cradle.

6. Firmly position the reader onto the OM-Gryphon™ cradle within 10 seconds, a beep will be emitted, signaling that the OM-Gryphon™ cradle has been paired to the Gryphon™ Mx30, and the green LED on the reader will go off.



7. Read the OM-Gryphon™ restore default code:

Restore OM-Gryphon™ default

Go to par. 4.6 Interface Selection.

4.4.1 Using Multiple M-Series Readers With Same Cradle

If you want to use several M-Series readers with the same OM-Gryphon™ cradle, you must first **Bind** the cradle with one of the readers (see previously described configuration procedure).

Successive readers can be associated with the same cradle by following the configuration procedure substituting the **Bind** command with **Join** (step 5).

5. Join

The green LED on the Gryphon™ Mx30 will blink: the reader is ready to be positioned onto the cradle. **Complete step 6.**

END of procedure.

CAUTION	*If the cradle is not **Bound** to a reader, its address assumes a random value which can cause conflicts and malfunctions to other cradles within its range.*

YOUR READER IS NOW READY TO READ BARCODES.

To change the defaults see par. 4.8.

4.4.2 Gryphon™ M/STAR-Modem™ in Stand Alone Mode

To configure a Gryphon™ Mx30 reader to communicate with STAR-Modem™ in Stand Alone Mode, follow the procedure in par. 4.4 substituting steps 4 and 5 with those below:

4. STAR-Modem™ Address

Read the code above and the four-digit address of the STAR-Modem™.

5. Exit and Save configuration

END of procedure.

YOUR READER IS NOW READY TO READ BARCODES.

To change the defaults see par. 4.8.

4.5 GRYPHON™ M/STAR-SYSTEM™ SETUP

The following procedure allows configuring a Gryphon™ Mx30 reader to communicate with various STAR-System™ devices such as STARGATE™ RF base stations.

1. Restore Gryphon™ Mx30 Default

2. Enter configuration

3. Set the connection according to the length of the codes to be read:

Code Length ≤240 Characters

Code Length >240 Characters

4. Set Radio Address

+

four digits from the Numeric Table in the range **0000-1999**.

All readers must have different addresses.

5.

First STAR-System™ Address

Read the code above <u>and the four-digit address</u> of the First STAR-System™ device in the system.

6.

Set Last STAR-System™ Address

Read the code above <u>and the four-digit address</u> of the Last STAR-System™ device in the system.

NOTE	*Whenever the system is composed of a single base station, the first and last base station addresses (steps 5 and 6) must have the same value.*

Exit and Save Configuration

7.

END of procedure.

YOUR READER IS NOW READY TO READ BARCODES.

To change the defaults see par. 4.8.

4.6 INTERFACE SELECTION

Read the interface selection code for your application.

RS232

Standard

POS Terminals

Nixdorf Mode A

Fujitsu

ICL Mode

For POS terminal default settings refer to par. 5.11.

PEN

WEDGE

IBM AT or PS/2 PCs

IBM XT

PC Notebook

IBM SURE1

IBM Terminal 3153

WEDGE (CONTINUED)

IBM Terminals 31xx, 32xx, 34xx, 37xx:

To select the interface for these IBM Terminals, read the correct KEY TRANSMISSION code. Select the KEYBOARD TYPE if necessary (default = advanced keyboard).

KEY TRANSMISSION MODE

make-only keyboard

make-break keyboard

KEYBOARD TYPE

◆ advanced keyboard

typewriter keyboard

WEDGE (CONTINUED)

ALT MODE

The ALT-mode selection allows barcodes sent to the PC to be interpreted correctly independently from the Keyboard Nationality used. **You do not need to make a Keyboard Nationality selection.**

(default = Num Lock Unchanged). **Make sure the Num Lock key on your keyboard is ON.**

IBM AT - ALT mode

PC Notebook - ALT mode

WYSE TERMINALS

ANSI Keyboard

PC Keyboard

ASCII Keyboard

VT220 style Keyboard

WEDGE (CONTINUED)

DIGITAL TERMINALS

VT2xx/VT3xx/VT4xx

APPLE

APPLE ADB Bus

4.7 USB READER CONFIGURATION

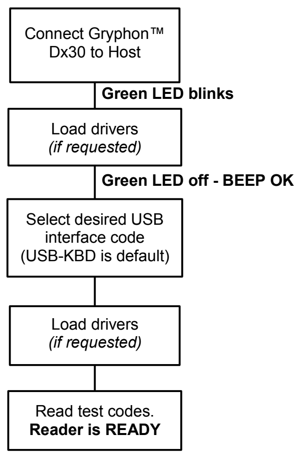
The USB interface is compatible with:

Windows 98 (and later)	IBM POS for Windows
Mac OS 8.0 (and later)	4690 Operating System

USB Start-up

As with all USB devices, upon connection, the Host performs several checks by communicating with the Gryphon™ Dx30. During this phase the green LED on the Gryphon™ Dx30 reader blinks and normal operations are suspended. Two basic conditions must be met before the Gryphon™ Dx30 is ready to read codes, the correct USB driver must be loaded and sufficient power must be supplied to the reader.

First Start-Up



For all systems, the correct USB driver for the default USB-KBD interface is included in the Host Operating System and will either be loaded automatically or will be suggested by the O.S. and should therefore be selected from the dialog box (the first time only).

Normally the Host supplies sufficient power to the reader, the start-up phase ends correctly, the green LED stops blinking and the reader emits the beep OK signal.

In rare cases, if the Host does not supply sufficient power to the reader, a dialog box will appear on the Host and the reader will be blocked (green LED continues blinking). In this case, disconnect the USB device cable at the Host (green LED stops blinking); and then try a different USB port as indicated by the Operating System message. The reader emits the beep OK signal. You can now read codes.

At this point you can read the USB interface configuration code according to your application. Load drivers from the O.S. (if requested). When configuring the USB-COM interface, the relevant files and drivers must be installed from the USB Device Installation software which can be downloaded from the web page http://www.datalogic.com.

The reader is ready to read barcodes. Successive start-ups will automatically recognize the previously loaded drivers.

USB

USB-KBD

USB-KBD-ALT-MODE

USB-KBD-APPLE

USB-COM*

USB-IBM-Table Top

USB-IBM-Hand Held

* When configuring USB-COM, the relevant files and drivers must be installed from the USB Device Installation software which can be downloaded from the web site http://www.datalogic.com.

4.8 CHANGING DEFAULT SETTINGS

Once your reader is setup, you can change the default parameters to meet your application needs. Refer to the preceding paragraphs for initial configuration in order to set the default values and select the interface for your application.

In this manual, the configuration parameters are divided into logical groups making it easy to find the desired function based on its reference group.

The first four groups are for Standard Interface parameter configuration:

RS232

USB

WEDGE

PEN EMULATION

The following parameter groups are common to all interface applications:

DATA FORMAT parameters regard the messages sent to the Host system for all interfaces except Pen Emulation.

POWER SAVE manages overall current consumption in the reading device.

READING PARAMETERS control various operating modes and indicator status functioning.

DECODING PARAMETERS maintain correct barcode decoding in certain special reading conditions.

CODE SELECTION parameters allow configuration of a personalized mix of codes, code families and their options.

ADVANCED FORMATTING PARAMETERS allow code concatenation and advanced formatting of messages towards the Host. It cannot be used with Pen Emulation connections.

RADIO PARAMETERS (Mx30 series only) allow configuration of radio control parameters.

RS232 PARAMETERS

All Gryphon™ Dx30 Series readers
+
Gryphon™ Mx30/OM-Gryphon™ configurations only

⊙ ***BAUD RATE*** ⊙

⊙ ***PARITY*** ⊙

⊙ ***DATA BITS*** ⊙

⊙ ***STOP BITS*** ⊙

⊙ ***HANDSHAKING*** ⊙

⊙ ***ACK/NACK PROTOCOL*** ⊙

⊙ ***FIFO*** ⊙

⊙ ***INTER-CHARACTER DELAY*** ⊙

⊙ ***RX TIMEOUT*** ⊙

⊙ ***SERIAL TRIGGER LOCK*** ⊙

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

BAUD RATE

300 baud

600 baud

1200 baud

2400 baud

4800 baud

◆ 9600 baud

19200 baud

38400 baud

PARITY

◆ none

even parity

odd parity

DATA BITS

7 bits

◆ 8 bits

9 bits

STOP BITS

◆ 1 stop bit

2 stop bits

HANDSHAKING

◆ disable

hardware (RTS/CTS)

software (XON/XOFF)

RTS always ON

See par. 5.1.1 for details.

ACK/NACK PROTOCOL

◆ disable

enable

See par. 5.1.2 for details, particularly on implementing this parameter with Gryphon™ Mx30.

FIFO

disable

◆ enable

See par. 5.1.3 for details.

INTER-CHARACTER DELAY

☞

delay between characters transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from 1 to 99 milliseconds

◆ delay disabled

RX TIMEOUT

☞

timeout control in reception from Host

Read 2 numbers from the table where:

00 = TIMEOUT disabled
01-99 = TIMEOUT from **.1** to **9.9** seconds

◆ rx timeout 5 seconds

See par. 5.1.4 for details.

SERIAL TRIGGER LOCK

◆ disabled

enable and select characters

Read 2 characters from the Hex/Numeric table in the range 00-FE where:

- First Character enables device trigger
- Second Character inhibits device trigger until the first character is received again.

USB PARAMETERS

⊙ ***USB-COM*** ⊙

Handshaking, Ack/Nack protocol, FIFO, Inter-character delay, Rx timeout, Serial trigger lock

⊙ ***USB-KBD*** ⊙

Keyboard nationality, FIFO, Inter-character delay, Inter-code delay, Control character emulation, USB keyboard speed

⊙ ***USB-IBM*** ⊙

No parameter selection required.

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

HANDSHAKING

◆ disable

hardware (RTS/CTS)

software (XON/XOFF)

RTS always ON

See par. 5.1.1 for details.

ACK/NACK PROTOCOL

◆ disable

enable

See par. 5.1.2 for details.

FIFO

disable

◆ enable

See par. 5.1.3 for details.

INTER-CHARACTER DELAY

delay between characters transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from **1** to **99** milliseconds

◆ delay disabled

RX TIMEOUT

timeout control in reception from Host

Read 2 numbers from the table where:

00 = TIMEOUT disabled
01-99 = TIMEOUT from **.1** to **9.9** seconds

◆ rx timeout 5 seconds

See par. 5.1.4 for details.

SERIAL TRIGGER LOCK

◆ disabled

enable and select characters

Read 2 characters from the Hex/Numeric table in the range 00-FE where:

- First Character enables device trigger
- Second Character inhibits device trigger until the first character is received again.

KEYBOARD NATIONALITY

Not Available for USB-KBD-ALT-MODE Interface

This parameter default value is restored through the Interface Selection code and not Restore Default.

Belgian

English

French

German

Italian

Japanese

Spanish

Swedish

◆ USA

FIFO

disable

◆ enable

See par. 5.1.3 for details.

INTER-CHARACTER DELAY

☞

delay between characters transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from **1** to **99** milliseconds

◆ delay disabled

INTER-CODE DELAY

delay between codes transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled

01-99 = DELAY from **1** to **99** seconds

◆ delay disabled

CONTROL CHARACTER EMULATION

◆ CTRL + Shift + Key

CTRL + Key

USB KEYBOARD SPEED

◆ Normal

Fast

WEDGE PARAMETERS

All Gryphon™ Dx30 Series readers
+
Gryphon™ Mx30/OM-Gryphon™ configurations only

⦿	***KEYBOARD NATIONALITY***	⦿
⦿	***CAPS LOCK***	⦿
⦿	***CAPS LOCK AUTO-RECOGNITION***	⦿
⦿	***NUM LOCK***	⦿
⦿	***INTER-CHARACTER DELAY***	⦿
⦿	***INTER-CODE DELAY***	⦿
⦿	***KEYBOARD SETTING***	⦿
⦿	***CONTROL CHARACTER EMULATION***	⦿

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

.

KEYBOARD NATIONALITY

Belgian

English

French

German

Italian

Spanish

Swedish

◆ USA

The Japanese Keyboard Nationality selection is valid only for IBM AT compatible PCs.

Japanese

CAPS LOCK

◆ caps lock OFF

caps lock ON

Select the appropriate code to match your keyboard caps lock status.

Note: Caps lock manual configuration is ignored when Caps Lock Auto-Recognition is enabled.

For **PC Notebook** interface selections, the caps lock status is automatically recognized, therefore this command is not necessary.

CAPS LOCK AUTO-RECOGNITION (IBM AT COMPATIBLE ONLY)

disable

◆ enable

NUM LOCK

toggle num lock

◆ num lock unchanged

This selection is used together with the Alt Mode interface selection for AT or Notebook PCs.

It changes the way the Alt Mode procedure is executed, therefore it should be set as follows:

- if your keyboard Num Lock is normally on use **num lock unchanged**
- if your keyboard Num Lock is normally off use **toggle num lock**

In this way the device will execute the Alt Mode procedure correctly for your application.

INTER-CHARACTER DELAY

☞ delay between characters transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from **1** to **99** milliseconds

◆ delay disabled

INTER-CODE DELAY

delay between codes transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from **1** to **99** seconds

◆ delay disabled

KEYBOARD SETTING

ALPHANUMERIC KEYBOARD SETTING

The reader can be used with terminals or PCs with various keyboard types and nationalities through a simple keyboard setting procedure.

The type of computer or terminal must be selected before activating the keyboard setting command.

Keyboard setting consists of communicating to the reader how to send data corresponding to the keyboard used in the application. The keys must be set in a specific order.

Press and release a key to set it.

Some characters may require more than one key pressed simultaneously during normal use (refer to the manual of your PC or terminal for keyboard use). The exact sequence must be indicated to the reader in this case pressing and releasing the different keys.

Example:

If one has to press the "Shift" and "4" keys simultaneously on the keyboard to transmit the character "$" to the video, to set the "$", press and release "Shift" then press and release "4".

Each pressed and released key must generate an acoustic signal on the reader, otherwise repress the key. Never press more than one key at the same time, even if this corresponds to the normal use of your keyboard.

Press "Backspace" to correct a wrong key entry. In this case the reader emits 2 beeps. Note: "CAPS LOCK" and "NUM LOCK" must be off before starting the keyboard setting procedure. "SHIFT" must be repressed for each character and cannot be substituted by "CAPS LOCK".

☞ setting the alphanumeric keyboard

Read the code above.
Press the keys shown in the following table according to their numerical order.

Some ASCII characters may be missing as this depends on the type of keyboard: these are generally particular characters relative to the various national symbologies. In this case:

- **The first 4 characters (Shift, Alt, Ctrl, and Backspace) can only be substituted with keys not used, or substituted with each other.**
- characters can be substituted with other single symbols (e.g. "SPACE") even if not included in the barcode set used.
- characters can be substituted with others corresponding to your keyboard.

The reader signals the end of the procedure with 2 beeps indicating the keys have been registered.

01 : **Shift**		
02 : **Alt**		
03 : **Ctrl**		
04 : **Backspace**		
05 : **SPACE**	28 : **7**	51 : **N**
06 : **!**	29 : **8**	52 : **O**
07 : **"**	30 : **9**	53 : **P**
08 : **#**	31 : **:**	54 : **Q**
09 : **$**	32 : **;**	55 : **R**
10 : **%**	33 : **<**	56 : **S**
11 : **&**	34 : **=**	57 : **T**
12 : **'**	35 : **>**	58 : **U**
13 : **(**	36 : **?**	59 : **V**
14 : **)**	37 : **@**	60 : **W**
15 : *****	38 : **A**	61 : **X**
16 : **+**	39 : **B**	62 : **Y**
17 : **,**	40 : **C**	63 : **Z**
18 : **-**	41 : **D**	64 : **[**
19 : **.**	42 : **E**	65 : \
20 : **/**	43 : **F**	66 : **]**
21 : **0**	44 : **G**	67 : **^**
22 : **1**	45 : **H**	68 : **_** (underscore)
23 : **2**	46 : **I**	69 : `
24 : **3**	47 : **J**	70 : **{**
25 : **4**	48 : **K**	71 : **|**
26 : **5**	49 : **L**	72 : **}**
27 : **6**	50 : **M**	73 : **~**
		74 : **DEL**

GRYPHON™ Mx30-Series Readers Only

When working with Gryphon™ M-Series readers, the keyboard setup functioning is signaled by the LEDs on the OM-Gryphon™ cradle. Each key stroke corresponds to a double blinking of the green LED.

By pressing the Backspace key the red LED on the OM-Gryphon™ cradle blinks, while the green LED stays on.

CAUTION

Do not place the reader onto the OM-GRYPHON™ cradle during this procedure. Otherwise, the battery charging will occur modifying the LEDs functioning.

Once the procedure has been completed, the green LED turns off.

CONTROL CHARACTER EMULATION

◆ CTRL + Shift + Key

CTRL + Key

PEN EMULATION

All Gryphon™ Dx30 Series readers
+
Gryphon™ Mx30/OM-Gryphon™ configurations only

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

PEN EMULATION

The operating mode parameters are complete commands and do not require reading the Enter and Exit configuration codes.

OPERATING MODE

◆ interpret mode

Interprets commands without sending them to the decoder.

transparent mode

Sends commands to the decoder without interpreting them.

MINIMUM OUTPUT PULSE

high resolution code
emulation

200 µs

400 µs

◆ 600 µs

800 µs

1 ms

1.2 ms

low resolution code
emulation

See par. 5.2.1 for details.

CONVERSION TO CODE 39 AND CODE 128

► disable conversion to Code 39

Transmits codes in their original format.

☐ enable conversion to Code 39

Converts codes read into Code 39 format.

enable conversion to Code 128

Converts codes read into Code 128 format.

► = default value for Gryphon™ Dx30 Series readers

☐ = default value fro Gryphon™ Mx30 Series readers

See par. 5.2.2 for details.

OVERFLOW

narrow

◆ medium

wide

See par. 5.2.3 for details.

OUTPUT LEVEL

◆ normal
(white = logic level 0)

inverted
(white = logic level 1)

See par. 5.2.4 for details.

IDLE LEVEL

◆ normal
(black level)

inverted
(white level)

See par. 5.2.4 for details.

INTER-BLOCK DELAY

delay between character blocks transmitted to Host

Read 2 numbers from the table where:

00 = DELAY disabled
01-99 = DELAY from .**1** to **9.9** seconds

◆ delay disabled

See par. 5.2.5 for details.

DATA FORMAT

NOT FOR PEN INTERFACES

⊙ ***CODE IDENTIFIER*** ⊙

⊙ ***CUSTOM CODE IDENTIFIER*** ⊙

⊙ ***HEADER*** ⊙

⊙ ***TERMINATOR*** ⊙

⊙ ***SPECIAL KEYS*** ⊙

⊙ ***FIELD ADJUSTMENT*** ⊙

⊙ ***FIELD ADJ. CHARACTER*** ⊙

⊙ ***CODE LENGTH TX*** ⊙

⊙ ***CHARACTER REPLACEMENT*** ⊙

⊙ ***ADDRESS STAMPING*** ⊙

⊙ ***ADDRESS DELIMITER*** ⊙

1. Read the **Enter Configuration** code <u>ONCE</u>, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code <u>ONCE</u>, available at the top of each page.

DATA FORMAT

CODE IDENTIFIER TABLE			
CODE	**AIM STANDARD**	**DATALOGIC STANDARD**	**Custom**
2/5 interleaved	] I *y*	N	
2/5 industrial	] X y	P	
2/5 normal 5 bars	] S y	O	
2/5 matrix 3 bars	] X y	Q	
EAN 8	] E 4	A	
EAN 13	] E 0	B	
UPC A	] X y	C	
UPC E	] X y	D	
EAN 8 with 2 ADD ON	] E 5	J	
EAN 8 with 5 ADD ON	] E 6	K	
EAN 13 with 2 ADD ON	] E 1	L	
EAN 13 with 5 ADD ON	] E 2	M	
UPC A with 2 ADD ON	] X y	F	
UPC A with 5 ADD ON	] X y	G	
UPC E with 2 ADD ON	] X y	H	
UPC E with 5 ADD ON	] X y	I	
Code 39	] A y	V	
Code 39 Full ASCII	] A y	W	
CODABAR	] F y	R	
ABC CODABAR	] X y	S	
Code 128	] C y	T	
EAN 128	] C y	k	
ISBT 128	] C4	f	
Code 93	] G y	U	
CIP/39	] X y	Y	
CIP/HR	] X y	e	
Code 32	] X y	X	
MSI	] M y	Z	
Plessey Standard	] P 0	a	
Plessey Anker	] P 1	o	
Telepen	] X 0	d	
Delta IBM	] X 0	c	
Code 11	] H y	b	
Code 16K	] K 0	p	
Code 49	] T y	q	
RSS Expanded Linear and Stacked	] e 0	t	
RSS Limited	] e 0	v	
RSS 14 Linear and Stacked	] e 0	u	

- AIM standard identifiers are not defined for all codes: the X identifier is assigned to the code for which the standard is not defined. The *y* value depends on the selected options (check digit tested or not, check digit tx or not, etc.).

- When customizing the Datalogic Standard code identifiers, 1 or 2 identifier characters can be defined for each code type. If only 1 identifier character is required, the second character must be selected as **FF** (disabled).

- The code identifier can be singly disabled for any code by simply selecting **FF** as the first identifier character.

- Write in the Custom character identifiers in the table above for your records.

CODE IDENTIFIER

◆ disable

Datalogic standard

AIM standard

custom

CUSTOM CODE IDENTIFIER

☞ define custom code identifier(s)

① Read the above code.
(Code Identifiers default to Datalogic standard, see table on previous page).

② Select the code type from the code table in Appendix B for the identifier you want to change.

③ You can define 1 or 2 identifier characters for each code type. If only 1 identifier character is required, the second character must be selected as **FF** (disabled). Read the hexadecimal value corresponding to the character(s) you want to define as identifiers for the code selected in step ②: valid characters are in the range **00-FD**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example: To define Code 39 Code Identifier = **@**

Read define custom code identifier(s) + Code 39 + **40** + **FF**

HEADER

no header

one character header

two character header

three character header

four character header

five character header

six character header

seven character header

eight character header

After selecting **one** of the desired Header codes, read the character(s) from the HEX table. Valid characters are in the range **00-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example:

four character header + **41** + **42** + **43** + **44** = Header **ABCD**

For more details see par. 5.3.1.

TERMINATOR

no terminator

one character terminator

two character terminator

three character terminator

four character terminator

five character terminator

six character terminator

seven character terminator

eight character terminator

After selecting **one** of the desired Header codes, read the character(s) from the HEX table. Valid characters are in the range **00-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example:

two character terminator

+ **0D** + **0A** = Terminator **CR LF**

For more details see par. 5.3.1.

SPECIAL KEYS

Available only for Wedge IBM AT-PS/2 and USB-KBD Interfaces

NOTE	*It is necessary to define each Special Key by following the procedure given in par. 5.3.2.*

Select one or more of the following Special Keys according to your needs.

Special Key 1

Special Key 2

Special Key 3

Special Key 4

Special Key 5

FIELD ADJUSTMENT

◆ disable field adjustment

Field adjustment allows a number of characters *n*, to be added to or subtracted from the barcode read. The adjustment can be different for each enabled code type. To define the field adjustment:

① Read the enable field adjustment code:

☞ enable field adjustment

② Select the code type from the Code Identifier Table in Appendix B.

③ Select the type of adjustment to perform:

right addition

left addition

right deletion

left deletion

④ Read a number in the range **01 - 32** from the Hex/Numeric Table to define how many characters to add or delete:

Conditions:

- Adjustment is only performed on the barcode data, the Code Identifier and Code Length Transmission fields are not modified by the field adjustment parameter.
- If the field setting would subtract more characters than exist in the barcode, the subtraction will take place only to code length 0.
- You can set up to a maximum of 10 different field adjustments on the same barcode family or on different barcode families.

Example: To add 4 characters to the right of Standard Code 39 Codes:

Read enable field adjustment + Code 39 + right addition + **04**

FIELD ADJUSTMENT CHARACTER

① Read the field adjustment character code:

field adjustment character

② Read the hexadecimal value corresponding to the character you want to use for field adjustment. Valid characters are in the range **00-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example:

To define the field adjustment character = **A**:

field adjustment character

Read + **41**

CODE LENGTH TX

◆ code length not transmitted

code length transmitted in variable-digit format

code length transmitted in fixed 4-digit format

The code length is transmitted in the message after the Headers and Code Identifier characters. The code length is calculated after performing any field adjustment operations.

CHARACTER REPLACEMENT

◆ disable character replacement

This parameter allows up to three characters to be replaced from the barcode read. These substitutions are stored in memory. To define each character replacement:

① Read one of the following character replacement codes:

first character replacement

second character replacement

third character replacement

② From the Code Identifier Table in Appendix B, read the Code Identifier for the desired code family.
0 = character replacement will be effective for all code families.

③ From the Hex/Numeric Table read two characters corresponding to the Hex value (**00**-**FE**) which identifies the character to be replaced. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

④ From the Hex/Numeric Table read two characters corresponding to the Hex value (**00**-**FE**) which identifies the new character to replace. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.
FF = the character to be replaced will be substituted with no character, that is, it will be removed from the code.

Example:

The following strings define:

1. *First Character Replacement:* substitution in *Code 39 barcodes* of all occurrences of the **0** character with the **1** character.

2. *Second Character Replacement:* substitution in *Code 39 barcodes* of all occurrences of the **A** character with the **B** character.

first character replacement		Code 39		ASCII characters corresponding to the HEX value for character **0**		ASCII characters corresponding to the HEX value for character **1**
	+		+	**30**	+	**31**

For Code 39 codes containing the string "**0**123", the contents transmitted will be "**1**123".

second character replacement		Code 39		ASCII characters corresponding to the HEX value for character **A**		ASCII characters corresponding to the HEX value for character **B**
	+		+	**41**	+	**42**

For Code 39 codes containing the string "**A**BCD", the contents transmitted will be "**B**BCD".

ADDRESS STAMPING (MX30 SERIES ONLY)

◆ disable reader address stamping

enable reader address stamping

See par. 5.3.3 for details.

ADDRESS DELIMITER (MX30 SERIES ONLY)

◆ disable reader address delimiter

enable reader address delimiter and select characters

Read 2 HEX characters in the range **00-FE**.

See par. 5.3.4 for details.

POWER SAVE

⊙ ***SCAN RATE*** ⊙

⊙ ***SLEEP STATE/USB SUSPEND*** ⊙

⊙ ***ENTER SLEEP TIMEOUT*** ⊙

⊙ ***STANDBY*** ⊙

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

SCAN RATE

67 scans per sec.

135 scans per sec.

◆ 270 scans per sec.

A lower scan rate reduces power consumption but can lengthen reading response time.

SLEEP STATE/USB SUSPEND

◆ disable

enable

See par. 5.4.1 for details.

For Mx30 series readers, sleep state is entered immediately after reading a code and is not configurable.

ENTER SLEEP TIMEOUT

☞

enter sleep timeout

Read 2 numbers in the range 00-99:

00 = Enter Sleep state immediately

01-99 = corresponds to a max. 9.9 sec. delay before entering the Sleep state.

◆ enter sleep timeout = 0.6 sec.

See par. 5.4.2 for details.

STANDBY

◆ disable

optimize for reading speed

enable

optimize for low power consumption

See par. 5.4.3 for details.

For Mx30 series readers, standby is always enabled and is not configurable.

READING PARAMETERS

⊙ ***HAND-HELD OPERATION*** ⊙

⊙ ***STAND OPERATION*** ⊙

⊙ ***HARDWARE TRIGGER MODE*** ⊙

⊙ ***TRIGGER-OFF TIMEOUT*** ⊙

⊙ ***FLASH MODE*** ⊙

⊙ ***READS PER CYCLE*** ⊙

⊙ ***SAFETY TIME*** ⊙

⊙ ***BEEPER INTENSITY*** ⊙

⊙ ***BEEPER TONE*** ⊙

⊙ ***BEEPER TYPE*** ⊙

⊙ ***BEEPER LENGTH*** ⊙

⊙ ***PDF DECODING RECOGNITION INTENSITY*** ⊙

⊙ ***GOOD READ SPOT DURATION*** ⊙

⊙ ***AUTOMATIC OPERATION AIMING LIGHT*** ⊙

1. Read the **Enter Configuration** code <u>ONCE</u>, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code <u>ONCE</u>, available at the top of each page.

HAND-HELD OPERATION

◆ hardware trigger

software trigger

* always on

* not available for Mx30 series readers

automatic

hardware trigger ready

STAND OPERATION

hardware trigger

software trigger

* always on

* not available for Mx30 series readers

◆ automatic

HARDWARE TRIGGER MODE

◆ trigger active level

trigger active pulse

See par. 5.5.1 for details

TRIGGER-OFF TIMEOUT

trigger-off timeout

Read 2 numbers in the range 00-99:

00 = disables the trigger-off timeout

01-99 = corresponds to a max. 99-sec. delay after the trigger press to allow the reader to turn off automatically.

◆ trigger-off timeout disabled

See par. 5.5.2 for details.

FLASH MODE

☞ "FLASH" ON duration

☞ "FLASH" OFF duration

Read 2 numbers in the range 01-99:
01 to 99 = from .1 to 9.9 seconds.

◆ Flash-ON = 1 sec. Flash-OFF = 0.6 sec

READS PER CYCLE

◆ one read per cycle

multiple reads per cycle

See par. 5.5.3 for details.

SAFETY TIME

safety time

Limits <u>same</u> code consecutive reading.

Read 2 numbers in the range 00-99:

00 = no same code consecutive reading until reader is removed (no decoding) for at least 400 ms.

01-99 = timeout from .1 to 9.9 seconds before a consecutive read on same code.

◆ safety time = 0.5 sec

See par. 5.5.4 for details.

BEEPER INTENSITY

* very low intensity

low intensity

medium intensity

◆ high intensity

* This sets the beeper OFF for data entry, while for all other beeper signals it has the meaning "very low intensity". The Beeper Intensity parameter is effective for all operating conditions described in par. 6.5.

BEEPER TONE

tone 1

◆ tone 2

tone 3

tone 4

BEEPER TYPE

◆ monotone

bitonal

BEEPER LENGTH

long

◆ short

PDF DECODING RECOGNITION INTENSITY

◆ low

high

GOOD READ SPOT DURATION

disable

short

◆ medium

long

AUTOMATIC OPERATION AIMING LIGHT

disable

◆ enable

See par. 5.5.5 for details.

DECODING PARAMETERS

⊙ ***INK SPREAD*** ⊙

⊙ ***OVERFLOW CONTROL*** ⊙

⊙ ***INTERDIGIT CONTROL*** ⊙

⊙ ***DECODING SAFETY*** ⊙

⊙ ***PUZZLE SOLVER™*** ⊙

CAUTION

Before changing these parameter values read the descriptions in par. 5.6.

1. Read the **Enter Configuration** code <u>ONCE</u>, available at the top of each page.

2. Read configuration codes from the desired groups.
   ◆ = Default value

3. Read the **Exit and Save Configuration** code <u>ONCE</u>, available at the top of each page.

INK SPREAD

disable

◆ enable

See par. 5.6.1 for details.

OVERFLOW CONTROL

disable

◆ enable

See par. 5.6.2 for details.

INTERDIGIT CONTROL

disable

◆ enable

See par. 5.6.3 for details.

DECODING SAFETY

◆ one read

(decoding safety disabled)

two reads

three reads

four reads

Required number of good reads before accepting code.

PUZZLE SOLVER™

◆ disable

enable

In the case of damaged or poorly printed codes, this parameter allows reading multiple parts of the single code to reconstruct it.

To read codes using this technology, simply move the illuminated bar over the code so that each line of the code is scanned. During this process a series of brief "ticks" indicates that reading is proceeding correctly.

Conditions:

- This parameter is only valid for the following codes:

EAN 8 without Add-on	**EAN 13 without Add-on**	**UPC A without Add-on**
Code 128	**Code 39**	

- For Code 39, Check digit control is forced.
- PuzzleSolver™ is not valid for ISBT 128 code.

CODE SELECTION

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

☞ = Read the code and follow the procedure given

◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

DISABLE ALL CODE FAMILIES

NOTE

The reader allows up to 5 code selections. This does not limit the number of CODES enabled to 5, as it depends on the code family.

SINGLE SELECTIONS =

- **<u>ONE</u>** <u>combination code</u> from the EAN family
- **<u>ONE</u>** <u>code</u> from the 2/5 family

Example

5 code selections:

1. **<u>2/5 Interleaved</u>**
2. **<u>2/5 Industrial</u>**
3. Code 128 + EAN 128
4. Code 39 Full ASCII + Code 32
5. **<u>UPC A/UPC E</u>**

In this section all <u>SINGLE</u> code selections are <u>underlined and in bold</u>.

EAN/UPC FAMILY

disable the family

① Read the desired family code

Note:
Since the EAN/UPC without ADD ON code selection is enabled by default, to correctly enable another selection, first disable the family.

WITHOUT ADD ON

◆ **EAN 8/EAN 13/UPC A/UPC E**

EAN 8/EAN 13

UPC A/UPC E

WITH ADD ON 2 AND 5

EAN 8/EAN 13/UPC A/UPC E

EAN 8/EAN 13

UPC A/UPC E

WITH ADD ON 2 ONLY

EAN 8/EAN 13

UPC A/UPC E

WITH ADD ON 5 ONLY

EAN 8/EAN 13

UPC A/UPC E

WITH AND WITHOUT ADD ON

◆ **EAN/UPC with and without ADD ON no Autodiscrimination**

EAN/UPC Autodiscrimination ADD ON by Prefix

By setting the EAN/UPC Autodiscrimination ADD ON by Prefix, the desired prefixes must be selected by reading the corresponding codes given in the following section, since no prefix is configured by default.

SELECT EAN/UPC PREFIXES

NOTE

When scanning the following codes, barcodes starting with the selected prefixes will be read and transmitted only if the ADD ON is present. If no ADD ON is found, the barcode will not be read. Barcodes starting with different characters are read regardless of ADD ON presence and transmitted always without ADD ON.

◆ **Cancel All Selections**

OR

select one or more of the following prefixes:

378/379

434/439

414/419

977

978

979

The commands above are not mutually exclusive. They can be used to configure more than one set of prefixes simultaneously.

Example:

The following string allows reading and transmitting with ADD ON all EAN/UPC starting with the 434/439, 977 and 978 prefixes:

1. *EAN/UPC Autodiscrimination ADD ON by Prefix*.

2. *434/439:* enables reading and transmission with ADD ON of all EAN/UPC barcodes starting with 434/439 prefixes.

3. *977:* enables reading and transmission with ADD ON of all EAN/UPC barcodes starting with 977 prefix.

4. *978:* enables reading and transmission with ADD ON of all EAN/UPC barcodes starting with 978 prefix.

EAN/UPC Autodiscrimination ADD ON by Prefix + 434/439 +

\+ 977 + 978

To clear the current prefix selections:

1. *Cancel all Selections*

Cancel All Selections

EAN/UPC CHECK DIGIT TX SELECTIONS

For each code type in this family you can choose to transmit the check digit or not

CHECK DIGIT TRANSMISSION

◆ EAN 8

◆ EAN 13

◆ UPC A

◆ UPC E

NO CHECK DIGIT TRANSMISSION

EAN 8

EAN 13

UPC A

UPC E

CONVERSION OPTIONS

UPC E to UPC A conversion

UPC E to EAN 13 conversion

UPC A to EAN 13 conversion

EAN 8 to EAN 13 conversion

Enable only ISBN conversion

Enable only ISSN conversion

Enable both ISBN and ISSN conversion

Disable both ISBN and ISSN conversion

2/5 FAMILY

disable the family

① Read the desired family code

◆ **Interleaved 2/5**

Normal 2/5 (5 Bars)

Industrial 2/5 (IATA)

Matrix 2/5 (3 Bars)

The pharmaceutical code below is part of the 2/5 family but has no check digit or code length selections.

Code CIP/HR

French pharmaceutical code

② Read a check digit selection

CHECK DIGIT TABLE

no check digit control

◆ check digit control and transmission

check digit control without transmission

③ Read **4** numbers for the code length where:

– **First 2 digits** = minimum code length.
– **Second 2 digits** = maximum code length.

The maximum code length is **99** characters.

The minimum code length must always be less than or equal to the maximum.

Examples:
0199 = variable from 1 to 99 digits in the code.
1010 = 10 digit code length only.

CODE 39 FAMILY

disables the family

① Read the desired family code

◆ **Standard Code 39**

Full ASCII Code 39

② Read a check digit selection

CHECK DIGIT TABLE

◆ no check digit control

check digit control
and transmission

check digit control
without transmission

Enter Configuration

CODE SELECTION

Exit and Save Configuration

The pharmaceutical codes below are part of the Code 39 family but have no check digit selections.

Code CIP39

French pharmaceutical code

Code 32

Italian pharmaceutical code

CODE LENGTH (optional)

The code length selection is valid for the entire Code 39 family

set code length

Read the code + **4** numbers for the code length where:

First 2 digits = minimum code length.

Second 2 digits = maximum code length.

The maximum code length is **99** characters.

The minimum code length must always be less than or equal to the maximum.

Examples: **0199** = variable from 1 to 99 digits in the code. **1010** = 10 digit code length only.

CODE 128 FAMILY

disables the family

➀ Read the desired family code

◆ **Code 128**

control without transmission
of check digit

EAN 128

control without transmission
of check digit

Transmit GS Before Code

Code EAN 128 uses the ASCII <GS> character to separate a variable length code field from the next code field. This character can also be transmitted before the code.

◆ disable

enable

If the <GS> character has been modified in the Character Replacement parameter, the new character is affected by this command.

ISBT 128

Enabling ISBT 128 automatically disables Puzzle Solver™.

CODE LENGTH (optional)

The code length selection is valid for the entire Code 128 family.

Read the code + **4** numbers for the code length where:

First 2 digits = minimum code length

Second 2 digits = maximum code length

set code length

The maximum code length is 99 characters. The minimum code length must always be less than or equal to the maximum.

Examples: **0199** = variable from 1 to 99 digits in the code. **1010=** 10 digit code length only.

The length is calculated on the output string.

CODE 93

◆ disables the code

Code 93

control without transmission of check digit

CODABAR FAMILY

◆ disable the family

① Read the desired equality control code

Standard Codabar

☞ no start/stop character equality control

Standard Codabar

☞ start/stop character equality control

② Read a start/stop transmission selection

START/STOP CHARACTER TRANSMISSION

no transmission

transmission

The Codabar ABC code below uses a fixed start/stop character transmission selection.

Codabar ABC

no start/stop character equality control but transmission.

Codabar ABC Forced Concatenation

enable Codabar ABC with forced concatenation

non start/stop character equality control but transmission

CODE LENGTH (optional)

The code length selection is valid for the entire Codabar family

Read the code + **4** numbers for the code length where:

First 2 digits = minimum code length.

Second 2 digits = maximum code length.

set code length

The maximum code length is **99** characters.

The minimum code length must always be less than or equal to the maximum.

Examples: **0199** = variable from 1 to 99 digits in the code. **1010** = 10 digit code length only.

START/STOP CHARACTER CASE IN TRANSMISSION

The start/stop character case selections below are valid for the entire Codabar family:

transmit start/stop characters in lower case

transmit start/stop characters in upper case

MSI

◆ disable the family

Enable the code by selecting one of the check digit selections.

no check digit control

MOD10 check digit control
no check digit transmission

MOD10 check digit control
check digit transmission

MOD11 - MOD10 check digit control
no check digit transmission

MOD11 - MOD10 check digit control
check digit transmission

MOD10 - MOD10 check digit control
no check digit transmission

MOD10 - MOD10 check digit control
check digit transmission

PLESSEY

◆ disable the family

Enable the code by selecting one of the check digit selections.

Standard Plessey

no check digit control

check digit control
check digit transmitted

check digit control
check digit not transmitted

Anker Plessey

no check digit control

check digit control
check digit transmitted

check digit control
check digit not transmitted

TELEPEN

◆ disable the family

Enable the code by selecting one of the check digit selections.

Numeric Telepen

no check digit control

check digit control
check digit transmitted

check digit control
check digit not transmitted

Alphanumeric Telepen

no check digit control

check digit control
check digit transmitted

check digit control
check digit not transmitted

DELTA IBM

◆ disable the family

Enable the code by selecting one of the check digit selections.

no check digit control

Type 1 check digit control

Type 2 check digit control

CODE 11

◆ disable the family

Enable the code by selecting one of the check digit selections.

no check digit control

Type C check digit control
check digit transmitted

Type C check digit control
check digit not transmitted

Type K check digit control
check digit transmitted

Type K check digit control
check digit not transmitted

Type C and Type K
check digit control
check digits transmitted

Type C and Type K
check digit control
check digits not transmitted

CODE 16K

◆ disable the code

Code 16K

To read stacked codes, simply move the reader over the code so that each line of the code is scanned. During this process a series of brief "ticks" indicates that reading is proceeding correctly.

CODE 49

◆ disable the code

Code 49

To read stacked codes, simply move the reader over the code so that each line of the code is scanned. During this process a series of brief "ticks" indicates that reading is proceeding correctly.

PDF417

Only PDF417 series readers

disable the code

◆ **PDF417**

To read stacked codes, simply move the reader over the code so that each line of the code is scanned. During this process a series of brief “ticks” indicates that reading is proceeding correctly.

RSS CODES

◆ disable the family

DISABLE CODE	**ENABLE CODE**
disable RSS Expanded Linear and Stacked	enable RSS Expanded Linear and Stacked
disable RSS Limited	enable RSS Limited
disable RSS 14 Linear and Stacked	enable RSS 14 Linear and Stacked

To read stacked codes, simply move the reader over the code so that each line of the code is scanned. During this process a series of brief "ticks" indicates that reading is proceeding correctly.

ADVANCED FORMATTING

NOT FOR PEN INTERFACES

⊙ ***CONCATENATION*** ⊙

⊙ ***ADVANCED FORMATTING*** ⊙

NOTE *Please follow the setup procedure carefully for these parameters.*

NOTE *The Advanced Formatting parameters may not be compatible with the IBM USB POS interface selection.*

1. Read the **Enter Configuration** code ONCE, available at the top of page .

2. **Read configuration codes precisely following the numbered procedure given.**

   ☞ = Read the code and follow the procedure given

   ◆ = Default value

3. Read the **Exit and Save Configuration** code ONCE, available at the top of page.

CONCATENATION

◆ disable

enable

Permits the concatenation of two codes defined by code type and length. It is possible to set a timeout for the second code reading and to define code transmission if the timeout expires.

The order of transmission is CODE 1-CODE 2.

Define Concatenation

1 **Code 1**

code ID

☞

Read the code type from the Code Identifier Table beginning in Appendix B.

code length

☞

Read a number in the range **01-99** from the Hex/Numeric Table.

2 **Code 2**

code ID

☞

Read the code type from the Code Identifier Table beginning in Appendix B.

code length

☞

Read a number in the range **01-99** from the Hex/Numeric Table.

3 **Concatenation Result Code ID**

use code 1 ID

use code 2 ID

Since you can concatenate codes from different families, you must select the Code ID character of the resulting code. The Code ID character will be sent in the output message only if it is enabled according to the Code Identifier selection (Datalogic, AIM, or Custom).

4 **Concatenation Timeout**

timeout

☞

Read two numbers in the range **00** to **99**
00= no timeout
01-99 = timeout from 1 to 99 seconds

Define the timeout, which determines the valid waiting period between the two codes, in order to accept concatenation. If the timeout expires, the resulting action will be based on the following selection. (HHDII)

5 Transmission after Timeout

no code transmitted
after timeout

only code 1 transmitted
(if read) after timeout

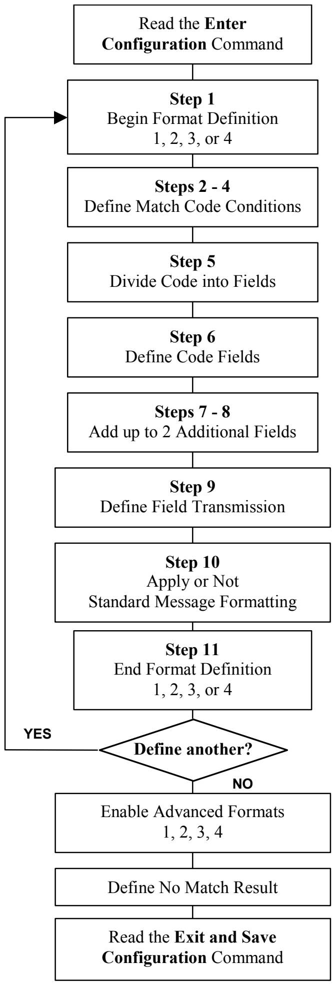
only code 2 transmitted
(if read) after timeout

either code 1 or code 2 transmitted
after timeout

ADVANCED FORMATTING

Advanced formatting has been designed to offer you complete flexibility in changing the format of barcode data **before** transmitting it to the host system. This formatting will be performed when the barcode data meets certain criteria which you will define in the following procedure.

Up to 4 advanced code management formats can be defined and saved in memory. For each format you must complete the entire configuration procedure:



1 **Begin Format Definition**

begin Format 1 definition

begin Format 2 definition

begin Format 3 definition

begin Format 4 definition

2 **Match Code Type**

match code type

Read the above code + the code type to match from the Code Identifier Table in Appendix B.

OR any code type

3 **Match Code Length**

match code length

Read the above code + two numbers in the range **01** to **99** for the exact code length.

OR any code length

4 **Match with Predefined Characters**

no match

OR

match with 1 character

match with a 2-character string

match with a 3-character string

match with a 4-character string

After selecting the predefined match code, read the character(s) from the HEX table. Range of characters = **01-FE**.

Example:
Match code with the 2-character predefined string = "@@".

Match with a 2-character string

Read + **40** + **40**

AND position of first character in predefined string

Read the above code + two numbers in the range **01** to **99** representing the character position in the code where the first character of the predefined string must be found.

Read **00** if the match string can be found in any character position.

ADVANCED FORMATTING

5 **Divide Code into Fields**

divide code into fields

Read one number in the range **1** to **5** to divide the code into fields.

6 **Define Code Fields**

define code fields

Each code field length can be set by either:

a) defining a field separator character to be found in the code itself. In this case you can choose to **discard** the code separator character or **include** it as the last character of the field.

OR BY

b) defining a match character to be found consecutively repeated in the code itself. In this case the field ends with the first character that does not match.

OR BY

c) specifying a specific character length up to the maximum of 99 characters.

OR BY

d) selecting the last field as variable length (if any).

You must define the same number of fields as selected in step 5, including fields that will not be transmitted.

ADVANCED FORMATTING

DEFINE FIELD 1 BY:
EITHER

field separator

a) ☞

Read the field separator character from the HEX table. Range of characters = **01-FE**.

discard separator

include separator

OR

match character

b) ☞

Read the match character from the HEX table. Range of characters = **01-FE**.

OR

field length

c) ☞

Read two numbers in the range **01** to **99** to define the field length.

OR

this is the last field (variable length)

d) ☞

AND

Field 1 Terminators

no field terminators

☞ 1 field terminator

☞ 2 field terminators

Read the field terminator character(s) from the HEX table. Valid range of characters for all readers = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

ADVANCED FORMATTING

DEFINE FIELD 2 BY:
EITHER

field separator

a) ☞

Read the field separator character from the HEX table. Range of characters = **01-FE**.

discard separator

include separator

OR

match character

b) ☞

Read the match character from the HEX table. Range of characters = **01-FE**.

OR

field length

c) ☞

Read two numbers in the range **01** to **99** to define the field length.

OR

this is the last field (variable length)

d) ☞

AND

Field 2 Terminators

no field terminators

1 field terminator ☞

2 field terminators ☞

Read the field terminator character(s) from the HEX table. Valid range of characters for all readers = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

ADVANCED FORMATTING

DEFINE FIELD 3 BY:
EITHER

field separator

a) ☞

Read the field separator character from the HEX table. Range of characters = **01-FE**.

discard separator

include separator

OR

match character

b) ☞

Read the match character from the HEX table. Range of characters = **01-FE**.

OR

field length

c) ☞

Read two numbers in the range **01** to **99** to define the field length.

OR

this is the last field (variable length)

d) ☞

AND

Field 3 Terminators

no field terminators

☞ 1 field terminator

☞ 2 field terminators

Read the field terminator character(s) from the HEX table. Valid range of characters for all readers = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

ADVANCED FORMATTING

DEFINE FIELD 4 BY:
EITHER

a) ☞ field separator

Read the field separator character from the HEX table. Range of characters = **01-FE**.

discard separator

include separator

OR

b) ☞ match character

Read the match character from the HEX table. Range of characters = **01-FE**.

OR

c) ☞ field length

Read two numbers in the range **01** to **99** to define the field length.

OR

d) ☞ this is the last field (variable length)

AND

Field 4 Terminators

no field terminators

☞ 1 field terminator

☞ 2 field terminators

Read the field terminator character(s) from the HEX table. Valid range of characters for all readers = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

ADVANCED FORMATTING

DEFINE FIELD 5 BY:
EITHER

field separator

a) ☞

Read the field separator character from the HEX table. Range of characters = **01-FE**.

discard separator

include separator

OR

match character

b) ☞

Read the match character from the HEX table. Range of characters = **01-FE**.

OR

field length

c) ☞

Read two numbers in the range **01** to **99** to define the field length.

OR

this is the last field (variable length)

d) ☞

AND

Field 5 Terminators

no field terminators

☞ 1 field terminator

☞ 2 field terminators

Read the field terminator character(s) from the HEX table. Valid range of characters for all readers = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

7 First Additional Fixed Field

no fixed field

1 character fixed field

2 character fixed field

3 character fixed field

4 character fixed field

5 character fixed field

6 character fixed field

After selecting **one** of the Additional Fixed Field codes, read the corresponding character(s) from the HEX table. Range of characters = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example:

4 Character Fixed Field

+ 4D + 41 + 49 + 4E = MAIN

8 **Second Additional Fixed Field**

no fixed field

1 character fixed field

2 character fixed field

3 character fixed field

4 character fixed field

5 character fixed field

6 character fixed field

After selecting **one** of the Additional Fixed Field codes, read the corresponding character(s) from the HEX table. Range of characters = **01-FE**. For Wedge and USB-KBD interfaces, it is also possible to read the **Special Key(s)** on page 65.

Example:

3 Character Fixed Field

+ 53 + 45 + 54 = SET

9

Field Transmission

number of fields to transmit

Read one number in the range **1** to **7** for the number of fields to transmit. **Include only fields to be transmitted.**

Field Order Transmission

Read the codes corresponding to the fields to transmit in the order in which they are to be transmitted. A field can be transmitted more than once. See example.

field 1

field 2

field 3

field 4

field 5

additional field 1

additional field 2

Example:

The barcode is divided into 3 defined fields plus 1 additional fixed field.

Transmit in the order: Field 2, Additional Field 1, Field 1, Field 2.

Number of Fields to Transmit + **4** + Field 2 + Additional Field 1 + Field 1 + Field 2

10 **Standard Formatting**

do not apply standard formatting

apply standard formatting

After performing Advanced Formatting on the barcode read, Standard Formatting (Headers, Code Length, Code ID, Terminators) can be applied to the message to be transmitted.

11 **End Format Definition**

end Format 1 definition

end Format 2 definition

end Format 3 definition

end Format 4 definition

Enable Advanced Format

◆ no Advanced Formats enabled

Advanced Format 1

enable

disable

Advanced Format 2

enable

disable

Advanced Format 3

enable

disable

Advanced Format 4

enable

disable

No Match Result

clear data - no transmission

transmit data using standard format

This selection determines the action to be taken when codes read do not conform to the advanced format requisites (no match).

- Codes not matching can be ignored, cleared from memory and not transmitted.
- Codes not matching can be transmitted using the Standard formatting (Headers, Code Length, Code ID, Terminators).

RADIO PARAMETERS

Gryphon™ Mx30 Series readers only

⊙ ***RADIO PROTOCOL TIMEOUT*** ⊙

⊙ ***POWER-OFF TIMEOUT*** ⊙

⊙ ***BEEPER CONTROL FOR RADIO RESPONSE*** ⊙

⊙ ***BATTERY TYPE*** ⊙

⊙ ***SINGLE STORE*** ⊙

1. Read the **Enter Configuration** code ONCE, available at the top of each page.

2. Read configuration codes from the desired groups.

   ☞ = Read the code and follow the procedure given

3. Read the **Exit and Save Configuration** code ONCE, available at the top of each page.

RADIO PROTOCOL TIMEOUT

☞ radio protocol timeout

Read a number from the table where:

02-19 = timeout from **2** to **19** seconds

◆ 2 seconds

See par. 5.7.1 for details.

POWER-OFF TIMEOUT

☞ power-off timeout

Read 2 numbers in the range 00-99:

00 = Power-off disabled; reader always ready

01-99 = corresponds to a max. 99 hour delay before power-off.

◆ power-off after 4 hours.

See par. 5.7.2 for details.

BEEPER CONTROL FOR RADIO RESPONSE

◆ normal

only good decode

only good reception

off

See par. 5.7.3 for details.

BATTERY TYPE

OM-GRYPHON™ CRADLE ONLY

◆ NiMh

alkaline

SINGLE STORE

◆ disable

one attempt

two attempts

three attempts

four attempts

five attempts

six attempts

seven attempts

eight attempts

nine attempts

See par. 5.7.4 for details

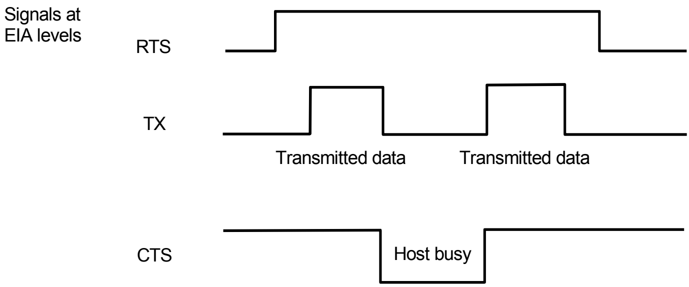
5 REFERENCES

5.1 RS232 PARAMETERS

5.1.1 Handshaking

Hardware handshaking: (RTS/CTS)

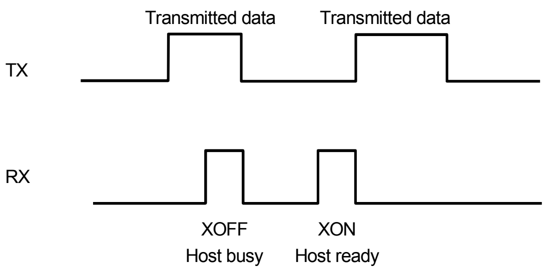
The RTS line is activated by the decoder before transmitting a character. Transmission is possible only if the CTS line (controlled by the Host) is active.



RTS/CTS handshaking

Software handshaking: (XON/XOFF)

During transmission, if the Host sends the XOFF character (13 Hex), the decoder interrupts the transmission with a maximum delay of one character and only resumes when the XON character (11 Hex) is received.

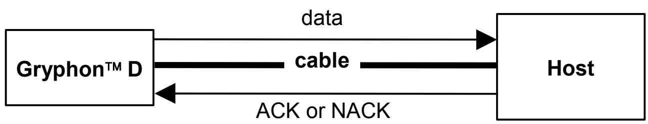


XON/XOFF handshaking

5.1.2 ACK/NACK Protocol

GRYPHON™ Dx30 Readers

This parameter sets a transmission protocol in which the Host responds to the reader after every code transmitted. The Host sends an ACK character (06 HEX) in the case of good reception or the NACK character (15 HEX) requesting re-transmission, in the case of bad reception.



ACK/NACK enabled

If the reader does not receive an ACK or NACK, transmission is ended after the RX Timeout (see par. 5.1.4).

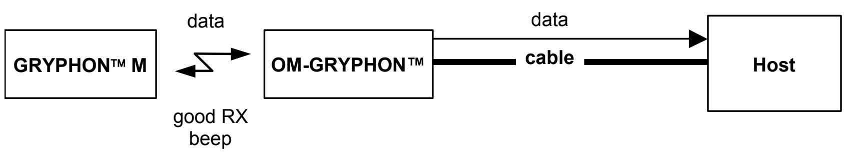
When ACK/NACK protocol is enabled, FIFO must be disabled manually, see par. 5.1.3.

GRYPHON™ Mx30 Readers

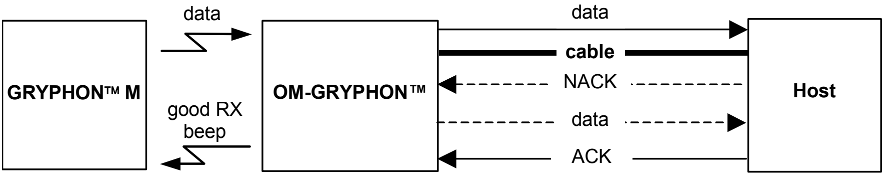
The transmission protocol takes place between reader, cradle and Host. The reader passes its data (code read) to the cradle which sends it to the Host.

In the following descriptions the completed transmission is indicated by the Beeper Control for Radio Response parameter with its default setting to Normal, see par. 5.7.3.

When ACK/NACK is disabled, there is no control from cradle to Host transmission, the reader responds with the good reception tone.



ACK/NACK disabled



ACK/NACK enabled

When ACK/NACK is enabled, the Host sends an ACK character (06 HEX) in the case of good reception or the NACK character (15 HEX) requesting re-transmission, in the case of bad reception. Only after the ACK character is received by the OM-Gryphon™ does the reader respond with the good reception tone.

If the reader does not receive an ACK or NACK, transmission is ended after the RX Timeout (see par. 5.1.4). See also Radio Protocol Timeout, par. 5.7.1 for Mx30 Series readers.

When ACK/NACK protocol is enabled, FIFO must be disabled manually, see par. 5.1.3.

5.1.3 FIFO

GRYPHON™ Dx30 Readers
This parameter determines whether data (barcodes) are buffered on a First In First Out basis allowing faster data collection in certain cases for example when using slow baud rates and/or hardware handshaking.

If the FIFO buffering is enabled, codes are collected and sent out on the serial line in the order of acquisition. About 800 characters can be collected (buffer full), after which the reader signals an error and discards any further codes until the transmission is restored.

If the FIFO buffering is disabled, each code must be transmitted before another one can be read.

GRYPHON™ Mx30 Readers
If enabled, the OM-Gryphon™ collects all messages sent by Gryphon™ Mx30 and sends them in order of acquisition to the connected Host.

If disabled, Gryphon™ Mx30 blocks message transmission until the OM-Gryphon™ has completed transmission towards the Host.

5.1.4 RX Timeout

When the RS232 interface is selected, the Host can be used to configure the device by sending it command strings (see appendix A).

This parameter can be used to automatically end data reception from the Host after the specified period of time.

If no character is received from the Host, after the timeout expires, any incomplete string (any string not terminated by <CR>) is flushed from the device buffer.

5.2 PEN PARAMETERS

5.2.1 Minimum Output Pulse

This parameter sets the duration of the output pulse corresponding to the narrowest element in the barcode. In this way the code resolution is controlled by the signal sent to the decoder, independently of the physical resolution of the code read.

The shortest pulse (200 μs) corresponds to a high resolution code emulation and therefore a shorter transfer speed to the decoder (for decoders able to work on high resolution codes). Likewise, longer pulses correspond to low resolution code emulation and therefore a longer transfer time to the decoder.

5.2.2 Conversion to Code 39 and Code 128

GRYPHON™ Dx30 Series Readers
When using these readers it is possible to convert all codes to Code 39. By disabling this option the decoded codes will be transmitted in their original format; except for the following codes which are ALWAYS converted into Code 39 format:
MSI, Plessey, Telepen, Delta IBM, Code 11, Code 16K, Code 49, PDF417, RSS.

GRYPHON™ Mx30 Series Readers
When using these readers it is possible to choose between converting the decoded codes into either Code 39 format or Code 128 format. It is not possible to disable conversion.

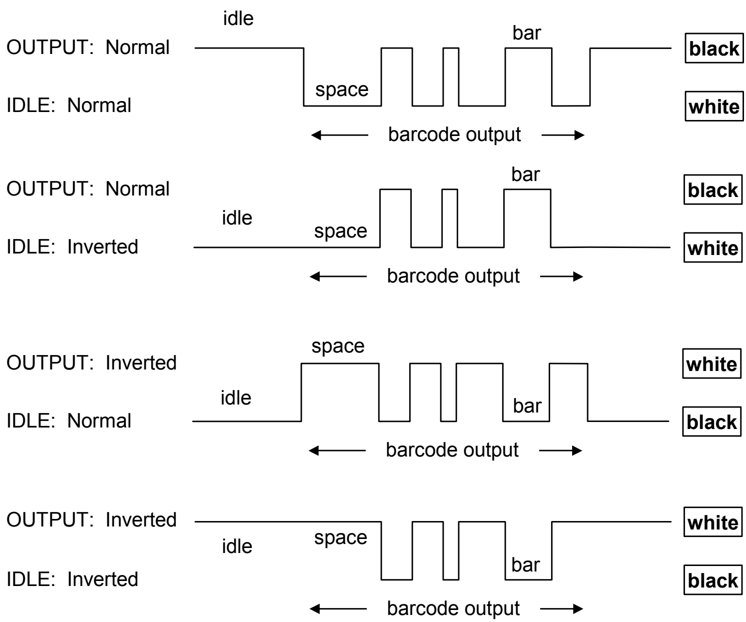
5.2.3 Overflow

This parameter generates a white space before the first bar and after the last bar of the code. The selections are as follows:

narrow = space 10 times the minimum output pulse.
medium = space 20 times the minimum output pulse.
wide = space 30 times the minimum output pulse.

5.2.4 Output and Idle Levels

The following state diagrams describe the different output and idle level combinations for Pen emulation:



Output and Idle Levels

5.2.5 Inter-Block Delay

For the PEN Emulation interface, data are sent to the Host in fixed size blocks of 20 characters each. The inter-block delay parameter allows setting a delay between each block sent to the Host.

5.3 DATA FORMAT

The system always provides gun to host data communication using the following message formatting:

Output Message from Gryphon™ Dx30 or Gryphon™ Mx30 Stand Alone Towards Host
[Header] [Gun_Addr] [Gun_Addr_delimiter]] [Code ID] [Code Length] CODE [Terminator]
[Items in square brackets are optional.]

Output Message from Gryphon™ Mx30 STAR-System™ Towards Host
[Header] [Code ID] [Code Length] CODE [Terminator]
[Items in square brackets are optional.]

5.3.1 Header/Terminator Selection

The header/terminator selection is not effected by the reading of the restore default code. In fact, header and terminator default values depend on the interface selection:

RS232:	no header, terminator CR-LF
WEDGE:	no header, terminator ENTER

These default values are always restored through the reading of RS232 or WEDGE interface selection code, see chapter 2.

For the WEDGE interface, the following extended keyboard values can also be configured:

EXTENDED KEYBOARD TO HEX CONVERSION TABLE				
	IBM AT IBM 3153 APPLE ADB	**IBM XT**	**IBM 31xx, 32xx, 34xx, 37xx**	**Wyse Digital**
HEX	KEY	KEY	KEY	KEY
83	ENTER	ENTER	FIELD EXIT	RETURN
84	TAB	TAB	TAB	TAB
85	F1	F1	F1	F1
86	F2	F2	F2	F2
87	F3	F3	F3	F3
88	F4	F4	F4	F4
89	F5	F5	F5	F5
8A	F6	F6	F6	F6
8B	F7	F7	F7	F7
8C	F8	F8	F8	F8
8D	F9	F9	F9	F9
8E	F10	F10	F10	F10
8F	F11	ESC	F11	F11
90	F12	BACKSPACE	F12	F12
91	HOME	HOME	ENTER	F13
92	END	END	RESET	F14
93	PG UP	PG UP	INSERT	F15
94	PG DOWN	PG DOWN	DELETE	F16
95	↑	↑	FIELD -	UP
96	↓	↓	FIELD +	DOWN
97	←	←	ENTER (Paddle)	LEFT
98	→	→	PRINT	RIGHT
99	ESC	ESC		ESC
9A	CTRL (Right)	CTRL (Right)		CTRL (Right)
9B	Euro	Space	Space	Space

For all devices using IBM AT (compatible) Wedge or USB-KBD interfaces, all values from **9C** to **FE** send the relative simulated keypress when available or else the relative ALT-Mode sequence. See the Hex to Character Conversion Table in Appendix C.

For all devices using other Wedge interfaces, all values from **9C** to **FE** send the Space character.

Enter Configuration

5.3.2 Define Special Key Sequence

The Special Key(s) for **Wedge IBM AT-PS/2 and USB-KBD interface users** can be associated with a sequence of keyboard keys that otherwise could not be selected, i.e. ALT + F6, SHIFT + F1. These Special Keys can be used for:

- Headers/Terminators
- Character Replacement
- Field Adjustment
- Custom Code ID
- Advanced Formatting – Define Field
- Advanced Formatting – Additional Fixed Field

Follow the procedure to define the desired Special Key sequence:

1. Read the Enter Configuration code above and select the Special Key to define (one at a time):

Define Special Key 1

Define Special Key 2

Define Special Key 3

Define Special Key 4

Define Special Key 5

2. Read <u>only one code</u> to be associated with the special key sequence:

SHIFT

OR

CTRL

OR

ALT

OR

CTRL + SHIFT

OR

ALT + SHIFT

OR

CTRL + ALT

3. Select the character to be associated with the Special Key sequence by reading the codes corresponding to the 3 character values from Appendix C. Then, read the Exit and Save Configuration code above to complete the Special Key sequence.

The character values having the ^{S} and ^{A} symbols **require** SHIFT or ALT keys or key combinations in **step 2**, in particular:
^{S} = the character is obtained in combination with SHIFT
^{A} = the character is obtained in combination with ALT

The following character values change according to the keyboard nationality.

CHAR \ KEYB	ITA	USA	FR	BE	DE	UK	ES	SW	JP
!	016 ^{S}	016 ^{S}	04A	03E	016 ^{S}	016 ^{S}	016 ^{S}	016 ^{S}	016 ^{S}
"	01E ^{S}	052 ^{S}	026	026	01E ^{S}	01E ^{S}	01E ^{S}	01E ^{S}	01E ^{S}
#	052 ^{A}	026 ^{S}	026 ^{A}	026 ^{A}	05D	05D	026 ^{A}	026 ^{S}	026 ^{S}
$	025 ^{S}	025 ^{S}	05B	05B	025 ^{S}	025 ^{S}	025 ^{S}	025 ^{A}	025 ^{S}
%	02E ^{S}	02E ^{S}	052 ^{S}	052 ^{S}	02E ^{S}	02E ^{S}	02E ^{S}	02E ^{S}	02E ^{S}
&	036 ^{S}	03D ^{S}	016	016	036 ^{S}	03D ^{S}	036 ^{S}	036 ^{S}	036 ^{S}
'	04E	052	025	025	05D ^{S}	052	04E	05D	03D ^{S}
(	03E ^{S}	046 ^{S}	02E	02E	03E ^{S}	046 ^{S}	03E ^{S}	03E ^{S}	03E ^{S}
)	046 ^{S}	045 ^{S}	04E	04E	046 ^{S}	045 ^{S}	046 ^{S}	046 ^{S}	046 ^{S}
*	05B ^{S}	03E ^{S}	05D	05B ^{S}	05B	03E ^{S}	05B ^{S}	05D ^{S}	052 ^{S}
+	05B	055 ^{S}	055 ^{S}	04A ^{S}	05B	055 ^{S}	05B	04E	04C ^{S}
,	041	041	03A	03A	041	041	041	041	041
-	04A	04E	036	055	04A	04E	04A	04A	04E
.	049	049	041 ^{S}	041 ^{S}	049	049	049	049	049
/	03D ^{S}	04A	049 ^{S}	049 ^{S}	03D ^{S}	04A	03D ^{S}	03D ^{S}	04A
0	045	045	045 ^{S}	045 ^{S}	045	045	045	045	045
1	016	016	016 ^{S}	016 ^{S}	016	016	016	016	016
2	01E	01E	01E ^{S}	01E ^{S}	01E	01E	01E	01E	01E
3	026	026	026 ^{S}	026 ^{S}	026	026	026	026	026
4	025	025	025 ^{S}	025 ^{S}	025	025	025	025	025
5	02E	02E	02E ^{S}	02E ^{S}	02E	02E	02E	02E	02E
6	036	036	036 ^{S}	036 ^{S}	036	036	036	036	036
7	03D	03D	03D ^{S}	03D ^{S}	03D	03D	03D	03D	03D
8	03E	03E	03E ^{S}	03E ^{S}	03E	03E	03E	03E	03E
9	046	046	046 ^{S}	046 ^{S}	046	046	046	046	046

KEYB / CHAR	ITA	USA	FR	BE	DE	UK	ES	SW	JP
:	049 S	04C S	049	049	049 S	04C S	049 S	049 S	052
;	041 S	04C	041	041	041 S	04C	041 S	041 S	04C
<	061	041 S	061	061	061	041 S	061	061	041 S
=	045 S	055	055	04A	045 S	055	045 S	045 S	04E S
>	061 S	049 S	061 S	061 S	061 S	049 S	061 S	061 S	049 S
?	04E	04A S	03A S	03A S	04E S	04A S	04E S	04E S	04A S
@	04C A	01E S	045 A	01E A	015 A	052 S	01E A	01E A	054
[	054 A	054	02E A	054 A	052 S	054	054 A	03E A	05B
\	00E	05D	03E A	061 A	04C S	061	00E A	04E A	051
]	05B A	05B	04E A	05B A	054 S	05B	05B A	046 A	05D
^	055 S	036 S	046 A	054	00E	036 S	054 S	05B S	055
_	04A S	04E S	03E	055	04A S	04E S	04A S	04A S	051 S
’ (accent)	-	00E	03D A	05D A	055 S	00E	054	055 S	054 S
a	01C	01C	015	015	01C	01C	01C	01C	01C
b	032	032	032	032	032	032	032	032	032
c	021	021	021	021	021	021	021	021	021
d	023	023	023	023	023	023	023	023	023
e	024	024	024	024	024	024	024	024	024
f	02B	02B	02B	02B	02B	02B	02B	02B	02B
g	034	034	034	034	034	034	034	034	034
h	033	033	033	033	033	033	033	033	033
i	043	043	043	043	043	043	043	043	043
j	03B	03B	03B	03B	03B	03B	03B	03B	03B
k	042	042	042	042	042	042	042	042	042
l	04B	04B	04B	04B	04B	04B	04B	04B	04B
m	03A	03A	04C	04C	03A	03A	03A	03A	03A
n	031	031	031	031	031	031	031	031	031
o	044	044	044	044	044	044	044	044	044
p	04D	04D	04D	04D	04D	04D	04D	04D	04D
q	015	015	01C	01C	015	015	015	015	015
r	02D	02D	02D	02D	02D	02D	02D	02D	02D
s	01B	01B	01B	01B	01B	01B	01B	01B	01B
t	02C	02C	02C	02C	02C	02C	02C	02C	02C
u	03C	03C	03C	03C	03C	03C	03C	03C	03C
v	02A	02A	02A	02A	02A	02A	02A	02A	02A

KEYB / CHAR	ITA	USA	FR	BE	DE	UK	ES	SW	JP
w	01D	01D	01A	01A	01D	01D	01D	01D	01D
x	022	022	022	022	022	022	022	022	022
y	035	035	035	035	01A	035	035	035	035
z	01A	01A	01D	01D	035	01A	01A	01A	01A
{	-	054 [S]	025 [A]	046 [A]	052	054 [S]	052 [A]	03D [A]	05B [S]
|	00E [S]	05D [S]	036 [A]	016 [A]	04C	061 [S]	016 [A]	061 [A]	06A [S]
}	-	05B [S]	055 [A]	045 [A]	054	05B [S]	05D [A]	045 [A]	05D [S]
~	-	00E [S]	01E [A]	04A [A]	04E	05D [S]	-	05B [A]	055 [S]

NOTE

To use upper case letters, it is necessary to read one of the SHIFT commands from step 2 before the value corresponding to the lower case letters.

The following key values are common to all the keyboard nationalities.

KEYB / KEY	ITA	USA	FR	BE	DE	UK	ES	SW	JP
ENTER	05A	05A	05A	05A	05A	05A	05A	05A	05A
TAB	00D	00D	00D	00D	00D	00D	00D	00D	00D
F1	005	005	005	005	005	005	005	005	005
F2	006	006	006	006	006	006	006	006	006
F3	004	004	004	004	004	004	004	004	004
F4	00C	00C	00C	00C	00C	00C	00C	00C	00C
F5	003	003	003	003	003	003	003	003	003
F6	00B	00B	00B	00B	00B	00B	00B	00B	00B
F7	083	083	083	083	083	083	083	083	083
F8	00A	00A	00A	00A	00A	00A	00A	00A	00A
F9	001	001	001	001	001	001	001	001	001
F10	009	009	009	009	009	009	009	009	009
F11	078	078	078	078	078	078	078	078	078
F12	007	007	007	007	007	007	007	007	007
Home	26C	26C	26C	26C	26C	26C	26C	26C	26C
End	269	269	269	269	269	269	269	269	269
PG UP	27D	27D	27D	27D	27D	27D	27D	27D	27D
PG down	27A	27A	27A	27A	27A	27A	27A	27A	27A

KEYB / CHAR	ITA	USA	FR	BE	DE	UK	ES	SW	JP
Up arrow	275	275	275	275	275	275	275	275	275
Down arrow	272	272	272	272	272	272	272	272	272
Left arrow	26B	26B	26B	26B	26B	26B	26B	26B	26B
Right arrow	274	274	274	274	274	274	274	274	274
Esc	076	076	076	076	076	076	076	076	076
Ctrl right	214	214	214	214	214	214	214	214	214
€	02E [A]	02E [A]	024 [A]	024 [A]	024 [A]	025 [A]	02E [A]	02E [A]	-
SPACE	029	029	029	029			029		029

NOTE

If Caps Lock Auto-Recognition is disabled, it is necessary to verify that the keyboard caps lock status matches the reader one.

EXAMPLES

- Defining Special Key Sequences -

1. the following example allows defining Special Key 1 as SHIFT + F5:

Read [enter configuration] + [define Special Key 1] + [SHIFT] +

\+ **003** (codes from Appendix C corresponding to the character value for F5) + [exit & save configuration]

2. the following example allows defining Special Key 2 as CTRL + S (upper case):

Read [enter configuration] + [define Special Key 2] + [CTRL + SHIFT] +

+ codes from Appendix C corresponding to the character value for s (lower case) **01B** + [exit & save configuration]

3. the following example allows defining Special Key 3 as Alt + F6:

Read [enter configuration] + [define Special Key 3] + [ALT] +

+ codes from Appendix C corresponding to the character value for F6 **00B** + [exit & save configuration]

4. the following example allows defining Special Key 4 as Alt + Shift + F1:

Read [enter configuration] + [define Special Key 4] + [ALT + SHIFT] +

+ codes from Appendix C corresponding to the character value for F1 **005** + [exit & save configuration]

- Integrating Special Keys in Headers/Terminators -

1. the following example allows setting Special Key 1 (defined in example 1 above) as terminator:

Read [enter configuration] + [one character terminator] + [special key 1] + [exit & save configuration]

2. the following example allows setting Special Key 2 (defined in example 2 above) as header:

Read enter configuration + one character header + special key 2 + exit & save configuration

3. the following example allows setting Special Key 3 (defined in example 3 above) as header:

Read enter configuration + one character header + special key 3 + exit & save configuration

4. the following example allows setting Special Key 4 (defined in example 4 above) and ENTER character as terminators:

Read enter configuration + two character terminator + special key 4 + ASCII characters corresponding to the HEX value for character ENTER **83** +

\+ exit & save configuration

5.3.3 Address Stamping

It is possible to include the reader address in the message sent to the host. The reader Address Stamping parameter consists of a 4-digit number in the range 0000-1999.
For message output format, refer to par. 5.3.

5.3.4 Address Delimiter

The Address Delimiter allows a character to be included to separate the reader Address stamping field from the next field in the message. Any character can be included in the hexadecimal range from 00 to FE.
For message output format, refer to par. 5.3.

5.4 POWER SAVE

5.4.1 Sleep State/USB Suspend

When using interfaces other than USB, this mode allows the μP in the reader to enter a “Sleep” state for minimum power consumption. For D-series readers, this command is only valid when hardware trigger type is selected.

Before entering Sleep mode, the following are verified:

- no commands coming from Host
- no data being transmitted to Host
- Enter Sleep Timeout ended (see par. 5.4.2)

To exit Sleep mode press the trigger.

Enabling the Sleep state implements Standby mode for CCD devices, see par. 5.4.3.

For Mx30 series readers, sleep state is entered immediately after reading a code and is not configurable. To exit Sleep mode press the trigger.

When using the USB interface, this mode allows the device to manage Selective Suspend conditions generated by the Host Operating System in which optimizing low power consumption (ex. Windows Stand-by). It is possible to exit the Suspend mode either from the Host (ex. moving the mouse during Stand-by) or through the barcode reader. The latter, called Remote Wakeup, makes the device wake up the Host restoring the communication. Remote Wakeup is possible by pressing the trigger.

5.4.2 Enter Sleep Timeout

For readers that have the Sleep state enabled, this timeout determines when the reader will enter this state.

5.4.3 Standby

If this command is enabled, part of the CCD circuitry shuts down (Standby), in order to optimize low power consumption when not reading. When the trigger is pressed this circuitry powers up. This mode causes a minor delay of about 100 ms before the reader is ready.

For Mx30 series readers, standby is always enabled and is not configurable. To exit Standby press the trigger.

5.5 READING PARAMETERS

5.5.1 Hardware Trigger Mode

This mode determines how the reading phase is controlled when the hardware trigger operating mode is selected:

- trigger active level: the reader goes ON when the trigger is pressed and goes OFF when it is released
- trigger active pulse: the reader goes ON at the first trigger press and goes OFF only at a second press

5.5.2 Trigger-Off Timeout

When this timeout is selected, the reader turns OFF automatically after the desired period of time.

5.5.3 Reads per Cycle

In general, a **reading cycle** corresponds to the ON + OFF times of a device.
The resulting effects of this parameter on code reading depend on other related configuration conditions. Here are the definitions of ON and OFF times.

- For readers using the software trigger parameter (FLASH MODE), a reading cycle corresponds to the *flash on* + *flash off* times. Code reading takes place during the *flash on* time.
- For readers using the *hardware trigger* parameter, a reading cycle corresponds to a trigger press (ON) + one of the following OFF events:

  trigger release (for *trigger active level*)

  a second trigger press (for *trigger active pulse*)

  trigger-off timeout (see par. 5.5.2).

When **one read per cycle** is selected, the device decodes only one code during the ON period and immediately turns the reader OFF. It is only possible to read another code when the next ON time occurs.

In **multiple reads per cycle**, the ON period is extended so that the device can continue decoding codes until an OFF event occurs. For software trigger mode, the *flash on* period is immediately reset after each read and therefore extended. If another code is decoded before the reset *flash on* period expires, it is again reset and the effect is that the device remains ON, decoding codes until the *flash on* or *timeout* period expires.
The Safety Time parameter should be used in this case to avoid unwanted multiple reading of the same code, see par. 5.5.4.

5.5.4 Safety Time

Safety time prevents the device from immediately decoding the same code more than once. Same code consecutive reading can be disabled requiring the reader to be removed from the code (no decoding) for at least 400 ms, or a timeout can be set up to 9.9 seconds before the decoder will accept the same code. Reading is immediate if the code changes.
The safety time parameter is not applicable when reading stacked codes or when setting one read per cycle in hardware trigger operating mode, since these settings require voluntary action by the user.

5.5.5 Automatic Operation Aiming Light

This parameter allows an aiming light to be continuously emitted in front of the reader to facilitate the positioning of the barcode to be read.

5.6 DECODING PARAMETERS

CAUTION	*These parameters are intended to enhance the decoding capability of the reader for particular applications. Used incorrectly, they can degrade the reading performance or increase the possibility of a decoding error.*

5.6.1 Ink-Spread

The ink-spread parameter allows the decoding of codes which are not perfectly printed because the page texture tends to absorb the ink.

5.6.2 Overflow Control

The overflow control parameter can be disabled when decoding codes printed on small surfaces, which do not allow the use of an overflow space.

This command does not effect code families 2/5, Code 128 and Code 93.

This command is forced (enabled) when PDF417 codes are enabled.

5.6.3 Interdigit Control

The interdigit control parameter verifies the interdigit spacing for code families Code 39 and Codabar.

5.7 RADIO PARAMETERS (MX30 SERIES ONLY)

5.7.1 Radio Protocol Timeout

This parameter sets the valid time to wait before transmission between the Mx30 series reader and OM-Gryphon™ cradle is considered failed.

This parameter should be set taking into consideration the radio traffic (number of readers in the same area).

If the RS232 interface is used with ACK/NACK enabled, this parameter should be at least equal to the RX Timeout parameter for low traffic environments. It should be increased if there are many readers in the same area.

It can be set between 2 and 19 seconds.

5.7.2 Power-Off Timeout

If this command is enabled, after the desired timeout in hours, the Gryphon™ batteries are disconnected and all power consumption ceases. To restore power, press the trigger once. The reader will now be ready to read codes.

Power-off does not effect configuration parameters.

5.7.3 Beeper Control for Radio Response

For Mx30 series readers, the data entry good read tone normally results in two beeps; the first indicates that the reader has decoded the code, the second indicates whether OM-Gryphon™ has received the data.

This can be changed according to the following selections:

- ♦ Normal: both good decode and good reception are signaled (two beeps).
- ♦ Only Good Decode: only the first beep indicating a good read is signaled.
- ♦ Only Good Reception: only the second beep indicating a good reception is signaled.
- ♦ Off: Neither good read nor good reception beeps are signaled.

For all configurations, any transmission errors will always be signaled.

5.7.4 Single Store

When single store mode is enabled, if the Gryphon™ Mx30 fails to transmit a code to the cradle, it enters a special operating mode that prevents the user from reading barcodes. When such operating mode is entered, the trigger no longer enables barcode reading but is used to retry transmission itself for the number of attempts selected in configuration. Once the transmission is successful the reader returns to the standard mode. If transmission is not successful after the number of configured attempts, the code is discarded.

Single store may be useful if you often read codes at the limit of the coverage area and there is a chance that code transmission can fail. In such case single store allows you to move to a more favorable position or location (i.e. closer to the cradle) and retry transmission without the necessity of re-reading the code since it is already stored in the reader.

Conversely, if single store is disabled, and the user wants to retry transmission, the code must be read again, and therefore the attempt must be made from basically the same location. If the user gives up, he does not know if the transaction was successful. (Actually the transmission could have been successful but the cradle may have been unable to acknowledge the message). There are applications in which there is no risk of transmission failure. In such cases it may be better to disable single store so that the user perceives a more consistent behavior of the trigger in that it always corresponds to code reading.

5.8 CONFIGURATION EDITING COMMANDS

The following commands carry out their specific function and then exit the configuration environment.

Command	Description
	Restore Gryphon™ reader default configuration (see the relative Quick Reference Manual for default settings)
	Transmit the Gryphon™ Dx30 or Gryphon™ Mx30 Software release
	Transmit Gryphon™ reader configuration in ASCII format. This command is not effective with Pen emulation interface or with the Gryphon™ D230 reader model.
	Restore OM-Gryphon™ default configuration (see the relative Quick Reference Manual for default settings)
	Transmit the OM-Gryphon™ Software release.
	Transmit OM-Gryphon™ configuration in ASCII format. This command is not effective with Pen emulation interface.

5.9 CONFIGURATION COPYING COMMANDS

5.9.1 Copy Gryphon™ Dx30 Series

Procedure:

① Connect the **master** (correctly configured reader) and the **slave** (reader to be configured) together through two RS232 serial interface cables and external power supply. Accessory cables and power supply are available from your Datalogic distributor to provide this connection.

RS232 Cables: CAB363 & CAB364 or CAB320 & CAB328

Power Supply: PG5

② Using the **slave** reader, read the Restore Default barcode and then the RS232 interface barcode from chapter 4 of this manual or from the Quick Reference Manual.

③ With the **master** reader, read the Configuration Copy barcode below.

Copy Configuration

The configuration will be copied from the master to the slave reader. The slave reader signals the end of the procedure with a series of beeps.

Note: The master reader can be configured for any interface.

5.9.2 Copy Gryphon™ Mx30 Series

Procedure:

① Using the **slave** reader and its OM-Gryphon™ cradle, follow the initialization procedure in chapter 4 of this manual or from the Quick Reference Manual.

② With the **master** Gryphon™ Mx30 (correctly configured reader), read the Copy Configuration barcode below. Then place it onto an OM-Gryphon™ cradle within 10 seconds. The reader will beep indicating the configuration has been copied.

The configuration will be simultaneously sent over the RS232 interface of the OM-Gryphon™. If this causes undesired effects disconnect the RS232 cable between the PC and OM-Gryphon™ during this process.

Copy Configuration

③ With the **slave** Gryphon™ Mx30, read the Get Configuration barcode below. Then place it onto the **same** OM-Gryphon™ cradle used in the step above. <u>The slave reader's address will not be changed</u>.

Get Configuration

The configuration will be copied from the master to the slave Gryphon™ Mx30. The slave Gryphon™ Mx30 signals the end of the procedure with a series of beeps. It is now ready to be used with its own OM-Gryphon™ cradle.

④ Repeat the procedure above to configure other slave readers. The OM-Gryphon™ can continue to configure slave readers until it receives another command or data.

5.9.3 Copy OM-Gryphon™

Procedure:

① Using the **slave** reader and its OM-Gryphon™ cradle, read the Restore Default barcode, set the radio address, and then read the RS232 interface barcode from chapter 4 of this manual or from the Quick Reference Manual.

② Connect the **master** OM-Gryphon™ and the **slave** OM-Gryphon™ (cradle to be configured) together through two RS232 serial interface cables and external power supply. Accessory cables and power supply are available from your Datalogic distributor to provide this connection.

RS232 Cables: CAB363 & CAB364 or CAB320 & CAB328

Power Supply: PG12

③ Read the Configuration Copy barcode below with a reader. Then place it onto the **master** OM-Gryphon™ cradle.

Copy Configuration

The configuration will be copied from the master OM-Gryphon™ to the slave OM-Gryphon™. The reader signals the end of the procedure with a series of beeps.

④ Repeat the procedure above to configure other slave cradles.

Note: The master OM-Gryphon™ can be configured for any interface.

5.10 BATTERY SELECTION

Battery selection is required only when the Gryphon™ Mx30 reader has an Alkaline battery and you want to use OM-Gryphon™ or C-Gryphon™ either for serial configuration, software upgrades or to hold Gryphon™ Mx30. Since this type of battery must not be charged it is necessary to disable the OM-Gryphon™ or C-Gryphon™ charge function by following the procedure:

1. With the Gryphon™ Mx30 read the following code:

Alkaline

The green LED on the Gryphon™ Mx30 will blink, signaling the reader has accepted the command.

2. Place the reader onto the charger within 10 seconds. The green LED turns off and a short beep is emitted

To enable the charge function repeat step 1 and 2 substituting the "Alkaline" code with the following one:

NiMh

CAUTION

Attempts to charge Alkaline batteries could cause leakage of liquid, generation of heat or, in extreme cases, explosion. If using Alkaline batteries, carefully follow the procedure above to avoid damage.

5.11 DEFAULT PARAMETERS FOR POS TERMINALS

The default values of the RS232 and Data Format parameters for POS terminals are listed in the following table:

	NIXDORF Mode A	FUJITSU	ICL Mode
RS232 Group			
Baud Rate	9600	9600	9600
Parity	Odd	None	Even
Data Bits	8	8	8
Stop Bits	1	1	1
Handshaking	Hardware (RTS/CTS)	None	RTS always ON
ACK/NACK Protocol	Disabled	Disabled	Disabled
FIFO	Disabled	Enabled	Enabled
Inter-Character Delay	Disabled	Disabled	Disabled
RX Timeout	9.9 sec	2 sec	9.9 sec
Serial Trigger Lock	Disabled	Disabled	Disabled
Data Format Group			
Code Identifier	Custom	Custom	Custom
Header	No Header	No Header	No Header
Terminator	CR	CR	CR
Field Adjustment	Disabled	Disabled	Disabled
Code Length TX	Not Transmitted	Not Transmitted	Not Transmitted
Character Replacement	Disabled	Disabled	Disabled
Address Stamping	Disabled	Disabled	Disabled
Address Delimiter	Disabled	Disabled	Disabled

The table below lists all the Code Identifiers available for the POS terminals:

CODE	NIXDORF Mode A	FUJITSU	ICL Mode
UPC-A	A0	A	A
UPC-E	C0	E	E
EAN-8	B	FF	FF
EAN-13	A	F	F
Code 39	M	None	C [code length]
Codabar	N	None	N [code length]
Code 128	K	None	L [code length]
Interleaved 2 of 5	I	None	I [code length]
Code 93	L	None	None
Industrial 2 of 5	H	None	H [code length]
UCC/EAN 128	P	None	L [code length]
MSI/Plessey	O	None	None
RSS	E	None	None
PDF417	Q	None	None
Other	None	None	None

6 TECHNICAL FEATURES

6.1 GRYPHON DX30

Electrical Features		
Power Supply	5 Vdc ± 5%	
Consumption:	**Gryphon D130**	**Gryphon D230**
Maximum Operating Sleep mode/USB Suspend	270 mA@ 5 Vdc 165 mA@ 5 Vdc <500 µA@ 5 Vdc	270 mA@ 5 Vdc 210 mA@ 5 Vdc 4 mA@ 5 Vdc
Max. Scan Rate	270 scans/sec	
Reading Indicators	LED, Good Read Spot, Beeper	
Optical Features		
Sensor	CCD solid state (3648 pixels)	
Illuminator Wavelength Max. LED Output Power	LED array 630 ~ 670 nm 0.33 mW	
LED Safety Class	Class 1 EN 60825-1	
Reading Field	see reading diagram	
Max. Resolution	**Gryphon Dx30-Std**	**Gryphon D130-LR**
	0.076 mm (3 mils)	0.11 mm (4.3 mils)
PCS (Datalogic Test Chart)	min. 15%	
Environmental Features		
Working Temperature	0 °C to + 55 °C / 32° to +131 °F	
Storage Temperature	-20 °C to + 70 °C / -4° to +158 °F	
Humidity	90% non condensing	
Drop Resistance	IEC 68-2-32 Test ED 1.8 m (5 ft. 11 in.)	
Protection Class	IP30	
Mechanical Features		
Weight (without cable)	about 210 g. (7.4 oz.)	
Cable Length	2 m. (6 ft. 6 in.)	

6.2 GRYPHON™ MX30

Electrical Features		
Battery Type	2 AA NiMh* batteries 1.2 V	
Time of Recharge	max 5 hours with NiMh 2100 mAh batteries	
Operating Autonomy (typical continuous reading)	40000 reads with NiMh 2100 mAh batteries	
Indicators	LED, Good Read Spot, Beeper	
Max Scan Rate	270 scans/sec	
Optical Features		
Sensor	CCD solid state (3648 pixels)	
Illuminator Wavelength Max. LED Output Power	LED array 630 ~ 670 nm 0.33 mW	
LED Safety Class	Class 1 EN 60825-1	
Reading Field	see reading diagram	
Max. Resolution	**Gryphon Mx30-Std**	**Gryphon M130-LR**
	0.076 mm (3 mils)	0.11 mm (4.3 mils)
PCS (Datalogic Test Chart)	min. 15%	
Radio Features		
Working Frequency	433.92 MHz	
Bit Rate	19200 baud	
Range (in open air)	30 m.	
System Configuration	**OM-GRYPHON™**	**STARGATE™**
Max. number of devices per base stations	16	255
Max. number of devices in the same reading area	2000	
Environmental Features		
Working Temperature	0° to + 40 °C / 32° to 104 °F	
Storage Temperature (without battery)	-20° to + 70 °C / - 4° to 158 °F	
Humidity	90% non condensing	
Drop Resistance	IEC 68-2-32 Test ED 1.8 m (5 ft. 11 in.)	
Protection Class	IP30	
Mechanical Features		
Weight (without batteries)	about 245 g. / 8.64 oz	
Dimensions	179 x 81 x 98 mm / 7.04 x 3.18 x 3.85 in	
Material	ABS and Polycarbonate molded with rubber	

* It is also possible to employ non-chargeable Alkaline AA batteries.

6.3 OM-GRYPHON™ / C-GRYPHON™

	OM-Gryphon™	C-Gryphon™
Electrical and General Features		
Supply Voltage	9 to 28 Vdc	
Power Consumption (max)	8 W (charging) *	
Indicators	Battery Charging LED (red) Charge completed LED (green) Power/Data LED (yellow)	
Recharge Time NiMh batteries	From 3 to 5 hours	
Host Interfaces		
RS232	300 to 38400 baud	9600 baud
WEDGE	IBM AT or PS/2, XT, PC Notebook, IBM SURE1, IBM 3153, 31xx, 32xx, 34xx, 37xx terminals, Wyse terminals, Digital VT terminals, Apple ADB Bus	Not supported
PEN Emulation	Selectable minimum pulse from 200 μs to 1.2 ms	
Environmental Features		
Working Temperature	0° to +40 °C / +32° to +104 °F	
Storage Temperature	-20° to +70 °C / -4° to +158 °F	
Humidity	90% non condensing	
Protection Class	IP30	
Mechanical Features		
Weight (without cable)	about 250 g. / 8.81 oz.	
Dimensions	208 x 107 x 55.5 mm / 8.1 x 4.2 x 2.18 in	
Material	ABS	

* Having a switching regulator inside, the OM-Gryphon™ and C-Gryphon™ draw the same power, regardless of the supply voltage. i.e. as the input voltage increases the current drawn decreases.

6.4 SYSTEM AND RADIO FEATURES

Radio Features		
Working Frequency	433.92 MHz	
Bit Rate	19200	
Range (in open air)	30 m	
RF Modulation	FSK	
System Configurations	**OM-GRYPHON™**	**STARGATE™**
Maximum number of devices per base stations	16	255
Maximum number of devices in the same reading area	2000	
Maximum number of base stations in network	-	16

6.5 STATUS INDICATORS

The reader has three indicators, LED, Beeper and Good Read Spot. The OM-Gryphon™ and C-Gryphon™ cradles have three indicator LEDs. They signal several operating conditions which are described in the tables below.

H = high tone **L** = low tone

GRYPHON™ Dx30/Mx30 READER START-UP

Beeper[1]	**Meaning**
L L L L	Parameters loaded correctly
H H H H long tones	Parameter loading error, reading or writing error in the non volatile memory
H L H L	Hardware error in EEPROM

GRYPHON™ Dx30/Mx30 READER CONFIGURATION

Beeper[1]	**Meaning**
H H H H	Correct entry or exit from Configuration mode
L	Good read of a command
L L L	Command read error

GRYPHON™ Dx30/Mx30 READER DATA ENTRY

Beeper[1]	LED	Good Read Spot	Meaning
one beep[2]	ON	ON	Correct read of a code in normal mode
H L long			TX buffer full (when FIFO is enabled) or TX error between Gryphon™ Mx30 and OM-Gryphon™
H long	ON	ON	Successful advanced format concatenation
H H H			Timeout expired – operation not completed
H H long			Error in advanced data formatting
	OFF	OFF	Ready to read a code

GRYPHON™ Mx30 POWER

Beeper	LED	Meaning
10 short H	10 short blinks	Low Battery

GRYPHON™ Mx30 BIND, JOIN, COPY COMMANDS

Beeper[1]	LED	Meaning
	Blinking	Command accepted; reader ready to be inserted into the cradle
L		Success
H L long tones		Failure

[1] Only the Beeper Intensity command can modify these signals.

[2] The data entry good read tone is user-configurable with all the Beeper commands in the Reading Parameters section.

For Mx30 series readers, normally this results in two beeps; the first indicates that the reader has decoded the code, the second indicates whether OM-Gryphon™ has received the data. See also par. 5.7.3.

OM-GRYPHON™/C-GRYPHON™ CHARGE STATUS

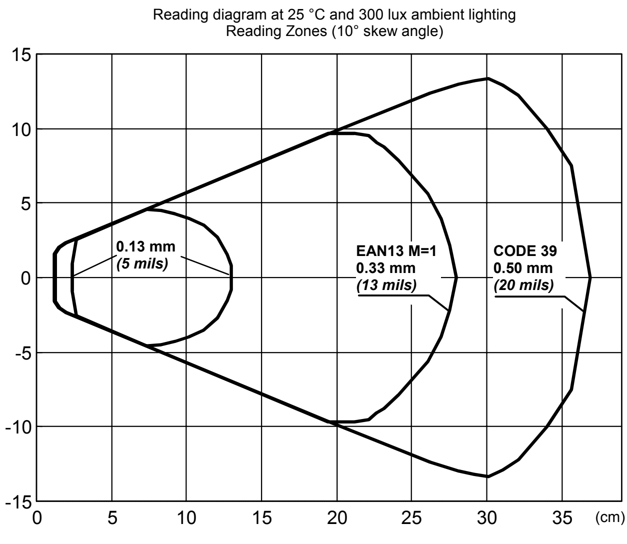
Red LED	Green LED	Meaning
ON	ON	Charging
OFF	ON	End of charge
OFF	OFF	No battery inserted
Flashing	OFF	Discharging (see par. 2.8.2)
Flashing	Flashing	Shorted or open battery

OM-GRYPHON™/C-GRYPHON™ POWER/COMMUNICATION

Yellow LED	Meaning
ON	Power applied
OFF	Error in reading EEPROM parameters
Blinking	Transmission over the Host port

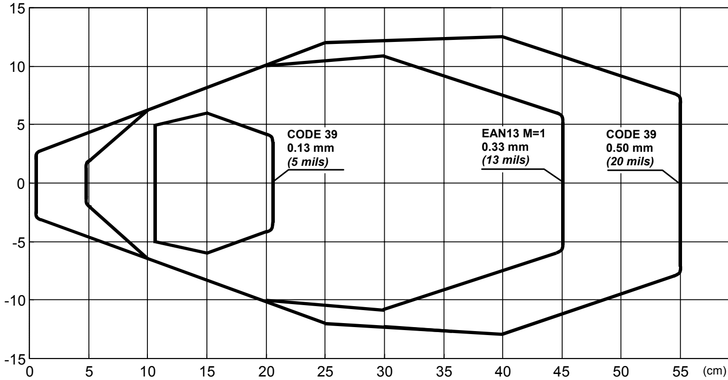
6.6 READING DIAGRAMS

GRYPHON™ D130/M130



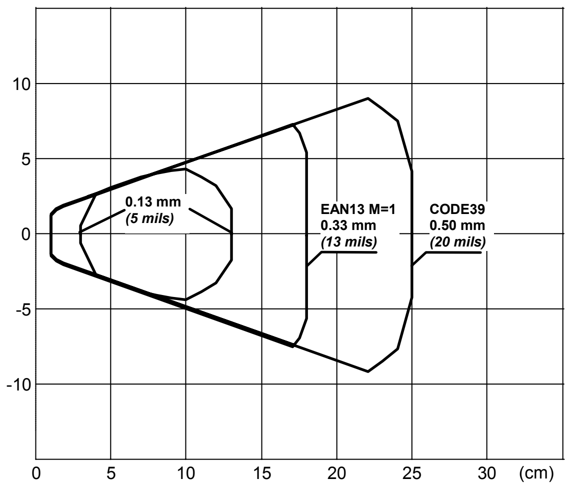
GRYPHON™ D130/M130-LR

Reading diagram at 25 °C and 300 lux ambient lighting
Reading Zones (10° skew angle)

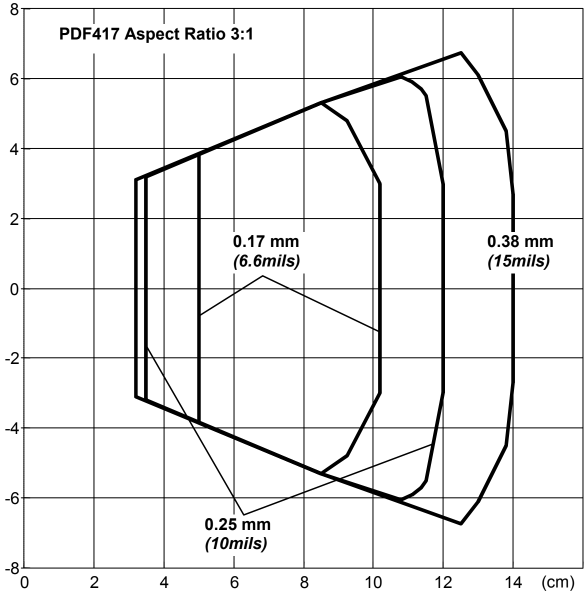


GRYPHON™ D230/M230

Reading diagram at 25 °C and 300 lux ambient lighting
Reading Zones (10° skew angle)



Reading diagram at 25 °C and 300 lux ambient lighting Reading Zones (10° skew angle)

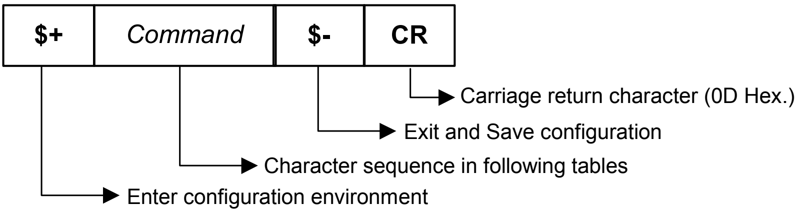


A HOST CONFIGURATION STRINGS

In this section we provide a description of how to modify the device configuration using serial strings sent from the Host.

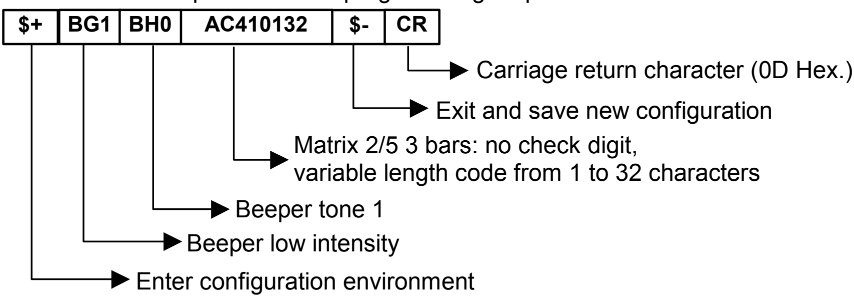
This method requires either the RS232 or USB-COM interface.

The device configuration can be changed by receiving commands from the Host through the serial interface. When this method is used, the programming sequence format is the following:



Example:

Multiple command programming sequence:



Each configuration parameter setting removes the condition previously active for that parameter.

NOTE	*The device buffer can contain about 400 characters. If your programming string goes over this value, you must split it into separate groups and send each group after a delay of at least 3 seconds to give the reader time to empty the buffer and interpret the commands.*

SERIAL CONFIGURATION STRINGS

ENTER/EXIT CONFIGURATION COMMANDS	
DESCRIPTION	**STRING**
Enter Configuration	**$+**
Exit and Save Configuration	**$-**
Restore Default	**$***
Transmit Software Release (not for PEN emulation)	**$!**
Transmit Device Configuration in ASCII (not for PEN emulation)	**$&**

These commands do not require $-.

INTERFACE SELECTION			
DESCRIPTION			**STRING**
RS232	Standard		**CP0**
	ICL Mode		**CM0**
	Fujitsu		**CM1**
	Nixdorf Mode A		**CM2EC0**
WEDGE	for IBM AT		**CP500**
	for IBM Terminals: 31xx, 32xx, 34xx, 37xx; make-break keyboard		**CP501**
	for IBM Terminals: 31xx, 32xx, 34xx, 37xx; make-only keyboard		**CP502**
	Keyboard Type for IBM Terminals 31xx, 32xx, 34xx, 37xx	typewriter	**FK0**
		advanced	**FK1**
	for IBM XT		**CP503**
	for IBM Terminal 3153		**CP504**
	for IBM PC Notebook		**CP505**
	for IBM SURE1		**CP506**
	for IBM AT - ALT mode		**CP507**
	for IBM PC Notebook - ALT mode		**CP508**
	for Wyse Terminal - ANSI Keyboard		**CP509**
	for Wyse Terminal - PC Keyboard		**CP510**
	for Wyse Terminal - ASCII Keyboard		**CP511**
	for Wyse Terminal - VT220 style Keyboard		**CP514**
	for Digital Terminals VT2xx/3xx/4xx		**CP512**
	for Apple ADB Bus		**CP513**
PEN EMULATION			**CP6**
USB	USB-KBD		**UA03**
	USB-KBD-ALT-MODE		**UA04**
	USB-KBD-APPLE		**UA05**
	USB-COM		**UA02**
	USB-IBM-Table Top		**UA00**
	USB-IBM-Hand Held		**UA01**

RS232		
DESCRIPTION		**STRING**
Baud rate	300	**CD1**
	600	**CD2**
	1200	**CD3**
	2400	**CD4**
	4800	**CD5**
	9600	**CD6**
	19200	**CD7**
	38400	**CD8**
Parity	none	**CC0**
	even	**CC1**
	odd	**CC2**
Data bits	7	**CA0**
	8	**CA1**
	9	**CA2**
Stop bits	1	**CB0**
	2	**CB1**
Handshaking	disable	**CE0**
	RTS/CTS	**CE1**
	XON/XOFF	**CE2**
	RTS always On	**CE3**
ACK/NACK Protocol	disable	**ER0**
	enable	**ER1**
FIFO	disable	**EC0**
	enable	**EC1**
Inter-character delay *(ms)*		**CK00 - CK99**
RX Timeout *(100 ms)*		**CL00 - CL99**
Serial Trigger Lock	disable	**CR0**
	enable and select characters	**CR1*ab***

a = Hex values representing an ASCII character from **00** to **FE** enabling the device trigger.

b = HEX values representing an ASCII character from **00** to **FE** inhibiting the device trigger.

USB		
DESCRIPTION		**STRING**
USB-COM		
Handshaking	disable	**CE0**
	RTS/CTS	**CE1**
	XON/XOFF	**CE2**
	RTS always ON	**CE3**
ACK/NACK Protocol	disable	**ER0**
	enable	**ER1**
FIFO	disable	**EC0**
	enable	**EC1**
Inter-character delay *(ms)*		**CK00 - CK99**
RX Timeout *(100 ms)*		**CL00 - CL99**
Serial Trigger Lock	disable	**CR0**
	enable	**CR1*ab***
USB-KBD		
Keyboard nationality (not for USB-KBD-ALT-MODE)	Belgian	**FJ7**
	English	**FJ4**
	French	**FJ2**
	German	**FJ3**
	Italian	**FJ1**
	Japanese	**FJ8**
	Spanish	**FJ6**
	Swedish	**FJ5**
	USA	**FJ0**
FIFO	disable	**EC0**
	enable	**EC1**
Delays	Inter-Character *(ms)*	**CK00 - CK99**
	Inter-Code *(s)*	**FG00 - FG99**
Control Character Emulation	CTRL + Shift + Key	**FO0**
	CTRL + Key	**FO1**
USB Keyboard Speed	Normal	**UT10**
	Fast	**UT01**

a = Hex values representing an ASCII character from **00** to **FE** enabling the device trigger.

b = HEX values representing an ASCII character from **00** to **FE** inhibiting the device trigger.

WEDGE		
DESCRIPTION		**STRING**
Keyboard nationality	Belgian	**FJ7**
	English	**FJ4**
	French	**FJ2**
	German	**FJ3**
	Italian	**FJ1**
	Spanish	**FJ6**
	Swedish	**FJ5**
	USA	**FJ0**
	Japanese (IBM AT compatible only)	**FJ8**
Caps Lock	caps Lock ON	**FE1**
	caps Lock OFF	**FE0**
Caps Lock Auto-Recognition (IBM AT compatible only)	disable	**FP0**
	enable	**FP1**
Num Lock	Toggle Num Lock	**FL1**
	Num Lock Unchanged	**FL0**
Delays	Inter-Character *(ms)*	**CK00 - CK99**
	Inter-Code *(s)*	**FG00 - FG99**
Control Character Emulation	CTRL + Shift + Key	**FO0**
	CTRL + Key	**FO1**

PEN		
DESCRIPTION		**STRING**
Operating mode	interpret (does not require **$+** or **$-**)	**$]**
	transparent (does not require **$+** or **$-**)	**$[**
Minimum output pulse	200μs	**DG0**
	400μs	**DG1**
	600μs	**DG2**
	800μs	**DG3**
	1 ms	**DG4**
	1.2 ms	**DG5**
Conversion to Code 39 and Code 128	disable conversion to Code 39 (D series only)	**DA0**
	enable conversion to Code 39	**DA1**
	enable conversion to Code 128 (M series only)	**DA2**
Output level	normal	**DD0**
	inverted	**DD1**
Idle level	normal	**DE0**
	inverted	**DE1**
Overflow	narrow overflow	**DH0**
	medium overflow	**DH1**
	wide overflow	**DH2**
Inter-Block delay *(100 ms)*		**CK00-CK99**

DATA FORMAT		
NOT FOR PEN EMULATION INTERFACES		
DESCRIPTION		**STRING**
Code Identifier	disable	**EB0**
	Datalogic standard	**EB1**
	AIM standard	**EB2**
	Custom	**EB3**
Custom Code Identifier		**EH*abc***
Headers	no header	**EA00**
	one character	**EA01*x***
	two characters	**EA02*xx***
	three characters	**EA03*xxx***
	four characters	**EA04*xxxx***
	five characters	**EA05*xxxxx***
	six characters	**EA06*xxxxxx***
	seven characters	**EA07*xxxxxxx***
	eight characters	**EA08*xxxxxxxx***
Terminators	no terminator	**EA10**
	one character	**EA11*x***
	two characters	**EA12*xx***
	three characters	**EA13*xxx***
	four characters	**EA14*xxxx***
	five characters	**EA15*xxxxx***
	six characters	**EA16*xxxxxx***
	seven characters	**EA17*xxxxxxx***
	eight characters	**EA18*xxxxxxxx***
Special Keys	special key 1	**9C**
	special key 2	**9D**
	special key 3	**9E**
	special key 4	**9F**
	special key 5	**A0**

a = ASCII character.
b, ***c***, ***x*** = HEX values representing an ASCII character.

a = ASCII character of the DATALOGIC STANDARD Code Identifier from the table on page 59.

b = Hex value of the first Custom Code Identifier character from **00** to **FD**;
FF = disable Code Identifier

c = Hex value of the second Custom Code Identifier character from **00** to **FD**;
FF = disable second character of Custom Code Identifier

x = Hex value from **00** to **FE**

DATA FORMAT (continued)		
NOT FOR PEN EMULATION INTERFACES		
DESCRIPTION		**STRING**
Code Length Tx	not transmitted	**EE0**
	transmitted in variable-digit format	**EE1**
	transmitted in fixed 4-digit format	**EE2**
Field Adjustment	disable	**EF0**
	right addition	**EF*a*0*d***
	left addition	**EF*a*1*d***
	right deletion	**EF*a*2*d***
	left deletion	**EF*a*3*d***
Field Adjustment Character		**EG*e***
Character Replacement	disable character replacement	**EO0**
	first character replacement	**EO1*afg***
	second character replacement	**EO2*afg***
	third character replacement	**EO3*afg***
Address Stamping	disable reader address stamping	**RU0**
	enable reader address stamping	**RU1**
Address Delimiter	disable reader address delimiter	**RV0**
	enable reader address delimiter and select character	**RV1*h***

a = ASCII character.
d = a number from the Hex/Numeric Table
e, f, g, h = HEX values representing an ASCII character

a = ASCII character of the DATALOGIC STANDARD Code Identifier from the table on page 59.

d = a number in the range **01-32** from the Hex/Numeric Table

e = Hex value from **00** to **FE**

f = Hex value of the character to be replaced from **00** to **FE**

g = Hex value of the new character to insert from **00** to **FE**
FF = replace with no new character (remove character)

h = a HEX value in the range from **00 - FE** representing the ASCII character.

POWER SAVE		
DESCRIPTION		**STRING**
Scan Rate	67 scans per sec.	**BT0**
	135 scans per sec.	**BT1**
	270 scans per sec.	**BT2**
Sleep State/USB Suspend	disable	**BQ0**
	enable	**BQ1**
Enter Sleep Timeout *(100 ms)*		**BR00-BR99**
Standby	enable	**BM0**
	disable	**BM1**

READING PARAMETERS		
DESCRIPTION		**STRING**
Hand-Held Operation	software trigger	**BK0**
	hardware trigger	**BK1**
	automatic	**BK2**
	always on	**BK3**
	hardware trigger ready	**BK4**
Stand Operation	software trigger	**BU1**
	hardware trigger	**BU3**
	automatic	**BU0**
	always on	**BU2**
Hardware Trigger Mode	trigger active level	**BA0**
	trigger active pulse	**BA1**
Trigger-off Timeout *(s)*		**BD00 - BD99**
FLASH ON *(100 ms)*		**BB001 - BB099**
FLASH OFF *(100 ms)*		**BB101 - BB199**
Reads per Cycle	one read	**BC0**
	multiple reads	**BC1**
Safety Time *(100 ms)*		**BE00 - BE99**
Beeper Intensity	very low intensity	**BG0**
	low intensity	**BG1**
	medium intensity	**BG2**
	high intensity	**BG3**
Beeper Tone	tone 1	**BH0**
	tone 2	**BH1**
	tone 3	**BH2**
	tone 4	**BH3**
Beeper Type	monotone	**BJ0**
	bitonal	**BJ1**
Beeper Length	long	**BI0**
	short	**BI1**
PDF Decoding Recognition Intensity	low	**BW0**
	high	**BW1**
Good Read Spot - Duration	disabled	**BV0**
	short	**BV1**
	medium	**BV2**
	long	**BV3**
Automatic Operation Aiming Light	disable	**Bb0**
	enable	**Bb1**

DECODING PARAMETERS		
DESCRIPTION		**STRING**
Ink-spread	disable	**AX0**
	enable	**AX1**
Overflow control	disable	**AW1**
	enable	**AW0**
Interdigit control	disable	**AV0**
	enable	**AV1**
Puzzle Solver™	disable	**AU0**
	enable	**AU1**
Decoding Safety	one read	**ED0**
	two reads	**ED1**
	three reads	**ED2**
	four reads	**ED3**

CODE SELECTION			
DESCRIPTION			**STRING**
DISABLE ALL FAMILY CODES			**AZ0**
EAN/UPC	disable EAN/UPC family		**AA0**
	EAN 8/EAN 13/UPC A/UPC E	without ADD ON	**AA1**
		with ADD ON	**AA5**
	EAN 8/EAN 13	without ADD ON	**AA3**
		with ADD ON 2 ONLY	**AAK**
		with ADD ON 5 ONLY	**AAL**
		with ADD ON 2 AND 5	**AA6**
	UPC A/UPC E	without ADD ON	**AA4**
		with ADD ON 2 ONLY	**AAM**
		with ADD ON 5 ONLY	**AAN**
		with ADD ON 2 AND 5	**AA7**
	EAN/UPC with and without Add On no Autodiscrimination		**AA8Ad0**
	EAN/UPC Autodiscrimination Add On by Prefix		**AA8Ad1**
	Select Prefixes	cancel all selections	**ET0**
		378/379	**ET1378ET2379**
		434/439	**ET3434ET4439**
		414/419	**ET5414ET6419**
		977	**ET7977**
		978	**ET8978**
		979	**ET9979**
	EAN 8 check digit transmission	Disable	**AAG0**
		Enable	**AAG1**
	EAN 13 check digit transmission	disable	**AAH0**
		enable	**AAH1**
	UPC A check digit transmission	disable	**AAI0**
		enable	**AAI1**

CODE SELECTION (continued)			
DESCRIPTION			**STRING**
EAN/UPC	UPC E check digit transmission	disable	**AAJ0**
		enable	**AAJ1**
	conversions	UPC E to UPC A	**AAA**
		UPC E to EAN 13	**AAB**
		UPC A to EAN 13	**AAC**
		EAN 8 to EAN 13	**AAD**
	ISBN Conversion codes	enable ISBN	**AP1**
		enable ISSN	**AP2**
		enable ISBN and ISSN	**AP3**
		disable ISBN and ISSN	**AP0**
Code 39	disable Code 39 family		**AB0**
	Standard	no check digit control	**AB11**
		check digit control and transmission	**AB12**
		check digit control without transmission	**AB13**
	Full ASCII	no check digit control	**AB21**
		check digit control and transmission	**AB22**
		check digit control without transmission	**AB23**
	CIP 39		**AB3**
	Code 32		**AB4**
	code length		**AB****xxxx***
2/5	disable Code 2/5 family		**AC0**
	Interleaved 2/5	no check digit control	**AC11*xxxx***
		check digit control and transmission	**AC12*xxxx***
		check digit control without transmission	**AC13*xxxx***
	Normal 2/5 5 bars	no check digit control	**AC21*xxxx***
		check digit control and transmission	**AC22*xxxx***
		check digit control without transmission	**AC23*xxxx***
	Industrial 2/5 (IATA)	no check digit control	**AC31*xxxx***
		check digit control and transmission	**AC32*xxxx***
		check digit control without transmission	**AC33*xxxx***
	Matrix 2/5 3 bars	no check digit control	**AC41*xxxx***
		check digit control and transmission	**AC42*xxxx***
		check digit control without transmission	**AC43*xxxx***
	CIP/HR		**AC5**

xxxx = ASCII numbers that define the code length where:

- First 2 digits = minimum acceptable code length.
- Second 2 digits = maximum acceptable code length.

The minimum code length must always be less than or equal to the maximum.

The maximum code length for all codes is 99 characters:

Examples:

0132 = variable length from 1 to 32 digits in the code.

1010 = 10 digit code length only.

CODE SELECTION (continued)				
DESCRIPTION				**STRING**
Codabar	disable Codabar family			**AD0**
	Standard	no start/stop character equality control nor transmission		**AD111**
		no start/stop character equality control but transmission		**AD112**
		start/stop character equality control but no transmission		**AD121**
		start/stop character equality control and transmission		**AD122**
	ABC Codabar	no start/stop character equality control but transmission		**AD212**
	Codabar ABC forced concatenation			**AD232**
	code length			**AD*_xxxx_**
	start/stop character case in transmission		lower case	**ADA0**
			upper case	**ADA1**
Code 128	disable Code 128 family			**AI0**
	enable Code 128 - control without transmission of check digit			**AI11**
	enable EAN 128 - control without transmission of check digit			**AI21**
	Transmit GS before Code	disable		**EQ0**
		enable		**EQ1**
	ISBT 128	enable ISBT 128		**AI31**
	code length			**AIL_xxxx_**
Code 93	disable Code 93 family			**AK0**
	enable Code 93 - control without transmission of check digit			**AK1**
MSI	disable the family			**AE0**
	no check			**AE1**
	MOD10 no tx			**AE2**
	MOD10 with tx			**AE3**
	MOD11-MOD10 no tx			**AE4**
	MOD11-MOD10 with tx			**AE5**
	MOD10-MOD10 no tx			**AE6**
	MOD10-MOD10 with tx			**AE7**

xxxx = ASCII numbers that define the code length where:

- First 2 digits = minimum acceptable code length.
- Second 2 digits = maximum acceptable code length.

The minimum code length must always be less than or equal to the maximum.

The maximum code length for all codes is 99 characters:

EXAMPLES:

0132 = variable length from 1 to 32 digits in the code.

1010 = 10 digit code length only.

CODE SELECTION (continued)		
DESCRIPTION		**STRING**
Plessey	disable the family	**AF0**
	Standard no check	**AF11**
	Standard check - with tx	**AF12**
	Standard check - no tx	**AF13**
	Anker no check	**AF21**
	Anker check - with tx	**AF22**
	Anker check - no tx	**AF23**
Telepen	disable the family	**AL0**
	Numeric no check	**AL11**
	Numeric check - with tx	**AL12**
	Numeric check - no tx	**AL13**
	Alpha no check	**AL21**
	Alpha check - with tx	**AL22**
	Alpha check - no tx	**AL23**
Delta IBM	disable the family	**AH0**
	no check	**AH1**
	Type 1 check	**AH2**
	Type 2 check	**AH3**
Code 11	disable the family	**AG0**
	no check	**AG1**
	Type C with tx	**AG21**
	Type C no tx	**AG22**
	Type K with tx	**AG31**
	Type K no tx	**AG32**
	Type C and K with tx	**AG41**
	Type C and K no tx	**AG42**
Code 16K	disable	**AJ0**
	enable	**AJ1**
Code 49	disable	**AM0**
	enable	**AM1**
PDF417	disable	**AR0**
	enable	**AR1**
RSS Codes	disable the family	**AQ0**
	disable RSS Expanded Linear and Stacked	**AQ10**
	enable RSS Expanded Linear and Stacked	**AQ11**
	disable RSS Limited	**AQ20**
	enable RSS Limited	**AQ21**
	disable RSS 14 Linear and Stacked	**AQ30**
	enable RSS 14 Linear and Stacked	**AQ31**

RADIO PARAMETERS		
DESCRIPTION		**STRING**
Radio Protocol Timeout	enable (seconds)	**RH02-RH19**
Power-Off Timeout		**RP00-RP99**
Beeper Control For Radio Response	normal	**BF0**
	only good decode	**BF1**
	only good reception	**BF2**
	off	**BF3**
Battery Type	alkaline	**RB0**
	NiMh	**RB1**
Single Store	disable	**RO0**
	one attempt	**RO1**
	two attempts	**RO2**
	three attempts	**RO3**
	four attempts	**RO4**
	five attempts	**RO5**
	six attempts	**RO6**
	seven attempts	**RO7**
	eight attempts	**RO8**
	nine attempts	**RO9**

B CODE IDENTIFIER TABLE

2/5 Interleaved

2/5 Industrial

2/5 normal 5 bars

2/5 matrix 3 bars

EAN 8

EAN 13

UPC A

UPC E

EAN 8 with 2 ADD ON

EAN 8 with 5 ADD ON

EAN 13 with 2 ADD ON

EAN 13 with 5 ADD ON

UPC A with 2 ADD ON

UPC A with 5 ADD ON

UPC E with 2 ADD ON

UPC E with 5 ADD ON

Code 39

Code 39 Full ASCII

CODABAR

ABC CODABAR

Code 128

EAN 128

Code 93

CIP/39

CIP/HR

Code 32

ISBT 128

MSI

Plessey Anker

Plessey Standard

Delta IBM

Telepen

Code 16K

Code 11

Code 49

RSS Expanded Linear and Stacked

RSS Limited

RSS 14 Linear and Stacked

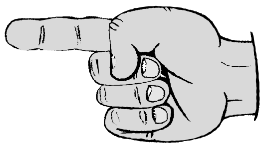
PDF417

C HEX AND NUMERIC TABLE

CHARACTER TO HEX CONVERSION TABLE					
char	**hex**	**char**	**hex**	**char**	**hex**
NUL	**00**	*	**2A**	U	**55**
SOH	**01**	+	**2B**	V	**56**
STX	**02**	,	**2C**	W	**57**
ETX	**03**	-	**2D**	X	**58**
EOT	**04**	.	**2E**	Y	**59**
ENQ	**05**	/	**2F**	Z	**5A**
ACK	**06**	0	**30**	[	**5B**
BEL	**07**	1	**31**	\	**5C**
BS	**08**	2	**32**	]	**5D**
HT	**09**	3	**33**	^	**5E**
LF	**0A**	4	**34**	_	**5F**
VT	**0B**	5	**35**	`	**60**
FF	**0C**	6	**36**	a	**61**
CR	**0D**	7	**37**	b	**62**
SO	**0E**	8	**38**	c	**63**
SI	**0F**	9	**39**	d	**64**
DLE	**10**	:	**3A**	e	**65**
DC1	**11**	;	**3B**	f	**66**
DC2	**12**	<	**3C**	g	**67**
DC3	**13**	=	**3D**	h	**68**
DC4	**14**	>	**3E**	i	**69**
NAK	**15**	?	**3F**	j	**6A**
SYN	**16**	@	**40**	k	**6B**
ETB	**17**	A	**41**	l	**6C**
CAN	**18**	B	**42**	m	**6D**
EM	**19**	C	**43**	n	**6E**
SUB	**1A**	D	**44**	o	**6F**
ESC	**1B**	E	**45**	p	**70**
FS	**1C**	F	**46**	q	**71**
GS	**1D**	G	**47**	r	**72**
RS	**1E**	H	**48**	s	**73**
US	**1F**	I	**49**	t	**74**
SPACE	**20**	J	**4A**	u	**75**
!	**21**	K	**4B**	v	**76**
"	**22**	L	**4C**	w	**77**
#	**23**	M	**4D**	x	**78**
$	**24**	N	**4E**	y	**79**
%	**25**	O	**4F**	z	**7A**
&	**26**	P	**50**	{	**7B**
'	**27**	Q	**51**	|	**7C**
(	**28**	R	**52**	}	**7D**
)	**29**	S	**53**	~	**7E**
		T	**54**	DEL	**7F**

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HEX AND NUMERIC SELECTIONS



CHARACTER TO HEX CONVERSION TABLE					
char	**hex**	**char**	**hex**	**char**	**hex**
€	**80**	ª	**AA**	Õ	**D5**
□	**81**	«	**AB**	Ö	**D6**
‚	**82**	¬	**AC**	×	**D7**
ENTER	**83**	-	**AD**	Ø	**D8**
TAB	**84**	®	**AE**	Ù	**D9**
F1	**85**	¯	**AF**	Ú	**DA**
F2	**86**	°	**B0**	Û	**DB**
F3	**87**	±	**B1**	Ü	**DC**
F4	**88**	²	**B2**	Ý	**DD**
F5	**89**	³	**B3**	Þ	**DE**
F6	**8A**	´	**B4**	ß	**DF**
F7	**8B**	µ	**B5**	à	**E0**
F8	**8C**	¶	**B6**	á	**E1**
F9	**8D**	·	**B7**	â	**E2**
F10	**8E**	¸	**B8**	ã	**E3**
F11	**8F**	¹	**B9**	ä	**E4**
F12	**90**	º	**BA**	å	**E5**
HOME	**91**	»	**BB**	æ	**E6**
END	**92**	¼	**BC**	ç	**E7**
Pg UP	**93**	½	**BD**	è	**E8**
Pg Down	**94**	¾	**BE**	é	**E9**
↑	**95**	¿	**BF**	ê	**EA**
↓	**96**	À	**C0**	ë	**EB**
←	**97**	Á	**C1**	ì	**EC**
→	**98**	Â	**C2**	í	**ED**
ESC	**99**	Ã	**C3**	î	**EE**
CTRL(Right)	**9A**	Ä	**C4**	ï	**EF**
€	**9B**	Å	**C5**	ð	**F0**
œ	**9C**	Æ	**C6**	ñ	**F1**
□	**9D**	Ç	**C7**	ò	**F2**
ž	**9E**	È	**C8**	ó	**F3**
Ÿ	**9F**	É	**C9**	ô	**F4**
NBSP	**A0**	Ê	**CA**	õ	**F5**
¡	**A1**	Ë	**CB**	ö	**F6**
¢	**A2**	Ì	**CC**	÷	**F7**
£	**A3**	Í	**CD**	ø	**F8**
¤	**A4**	Î	**CE**	ù	**F9**
¥	**A5**	Ï	**CF**	ú	**FA**
¦	**A6**	Ð	**D0**	û	**FB**
§	**A7**	Ñ	**D1**	ü	**FC**
¨	**A8**	Ò	**D2**	ý	**FD**
©	**A9**	Ó	**D3**	Reserved	**FE**
		Ô	**D4**	Reserved	**FF**

HEX / NUMERIC TABLE

0

1

2

3

4

5

6

7

8

9

A

B

C

D

E

F

Backspace

Cancels an incomplete configuration sequence

90ACC1930